

Bids Due: Dec. 5, 1974 at 2:00 p.m.  
EST

B. File

SET NO. \_\_\_\_\_

SPECIFICATIONS

for

RESTORATION OF  
THE EAST & WEST BARRACKS  
AT

FORT FREDERICK STATE PARK  
WASHINGTON COUNTY, MARYLAND

FOR THE  
DEPARTMENT OF GENERAL SERVICES

PROJECT NO. P-12-691

DATE: JUNE, 1974

STATE OF MARYLAND

DEPARTMENT OF GENERAL SERVICES

BOARD OF PUBLIC WORKS

GEORGE R. LEWIS, Secretary  
State Office Building  
301 W. Preston Street  
Baltimore, Md. 21201

MARVIN MANDEL, Governor  
LOUIS L. GOLDSTEIN, Comptroller  
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## INSTRUCTIONS TO BIDDERS

### 1. Visit the Site:

Prior to preparing the bid form *Visit the Site*. Familiarize yourself with all existing conditions. Make all necessary investigations as to locations of pipe lines and services and all other matters which can affect the work proposed. Familiarize yourself with the plans and specifications. *Read the General Conditions of the Contract*.

### 2. In Filling Out Proposal Forms:

- a. Use only forms supplied by the State.
- b. Make an original and one (1) copy for submission, - Par. i. below.
- c. Use ink or typewriter.
- d. Fill in all blank spaces.
- e. Do not alter or change any wording in the proposal form.
- f. State all prices in both words and figures.
- g. Sign the proposal form with pen and ink.  
*Individuals* sign with full name and address. *Co-Partnerships*: - A member of the firm must sign and include address. List the names and addresses of all other members of the firm. *Corporations*: An officer of the corporation must sign and include name and address of Corporation. The corporate seal shall be affixed near the signature.
- h. Attach the bid bond or certified check.
- i. Place the original and one (1) copy of the proposal in the blue envelope supplied by the State.
- j. **Seal and Deliver:** Delivery (mail or otherwise) must be made prior to published opening time so that Form of Proposal can be opened at the Public bid opening at the time specified.

### 3. Bid Security:

When the total bid is \$2,000.00, or more, each bidder must furnish a bid bond with the proposal, in a form and by a surety company approved by the State. The bond must be in an amount not less than five per cent (5%) of the amount of the base bids. The Contractor to whom the contract is awarded must also furnish Performance and Payment Bonds, D.G.S. Form 13A and 13B, each in the amount of one hundred per cent (100%) of the contract price.

Should the bidder to whom the contract is awarded fail or be unable to execute the contract, for any reason, within ten (10) days after notification of award, then an amount equal to the difference between the accepted bid price, and that of next highest bidder shall be forfeited to the State as liquidated damages.

Certified checks are acceptable in lieu of bid bond, and subject to the same conditions.

Bond and checks must be made payable to the Comptroller of the State of Maryland.

Bid Bonds and checks of all but the three (3) lowest bidders will usually be returned immediately after determination of the order of bids. The Bid Bonds and checks of all bidders may be held ninety (90) days.

### 4. Bid Opening:

Will be public, at the office of the Department of General Services, at the hour stated, State Office Building, 301 West Preston St, Baltimore, Maryland 21201, on the 14th floor.

### 5. Reserved Rights:

The State reserves the right to reject any and all bids or to accept any bid in the interest of the people of the State of Maryland. For the same reason the State reserves the right to waive any informality in a Bid.

### 6. Licenses and Qualifications:

Bidders must be licensed as required by Construction Firm Law of Maryland (Article 56, Section 180 Annotated Code of Maryland 1957 Edition) and shall submit a Qualification Questionnaire (D.G.S. Form No. 15) as requested.

### 7. Discrepancies:

Should a bidder find discrepancies in the plans and/or specifications or should he be in doubt as to the meaning or intent of any part thereof, he must, not later than four (4) days (Saturdays and Sundays excluded) prior to the bid opening, request clarification from the Architect, who will issue an addendum or otherwise clarify the matter. Failure to request such clarification is a waiver to any claim by the bidder for expense made necessary by reason of later interpretation of the contract documents by the Architect.

### 8. Time of Completion:

The time of completion is important and may be considered in awarding the contract. The days must be stated in calendar days, Saturdays and Sundays included.



**DEPARTMENT OF GENERAL SERVICES  
STATE OF MARYLAND  
GENERAL CONDITIONS**

Revised  
1/1/73

**ART. 1. DEFINITIONS.**

a. The Contract Documents consist of the Agreement, these General Conditions, Specifications and the Drawings, including all modifications thereof incorporated in the documents before their execution. These form the Contract.

b. The State, the Contractor and the Architect are those mentioned as such in the Agreement. They are treated throughout the Contract Documents as if each were of the singular number and masculine gender.

(1) The "State" shall mean the legally constituted agency in contracting matters for the State of Maryland, viz: the Board of Public Works. The said Board of Public Works shall be represented in technical aspects of matters under the Contract and these General Conditions by the Department of General Services.

(2) The "Architect" shall mean the registered Architect commissioned by the State to prepare the plans. Should no independent Architect have been appointed to prepare the contract documents or supervise the construction, then the Department of General Services is the agency referred to by the term "Architect". Whenever the contract documents are prepared by a registered Engineer in independent practice, and no Architect is employed, all reference to Architect refers to the Engineer.

(3) The "Contractor" is the person having direct contractual relation with the State for execution of the "work".

c. The term "Sub-contractor", as employed herein, includes only those having a direct contract with the Contractor. It includes one who furnishes material, worked to a special design, according to the plans and specifications for the "Work". It excludes one who merely furnishes material not so worked.

d. "Written Notice" shall be deemed to have been duly served if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered to or sent by registered mail to the last business address known to him who gives notice.

e. The term "Work" of the Contractor or Sub-contractor includes labor or tools or materials or equipment and transportation, or any two or more of those items necessary for the execution and completion of the Contract.

f. The word "Repair" where used in these Contract Documents, shall be taken to mean to restore after injury, deterioration, or wear; to mend, to renovate, by such means as appropriate and to supply such materials and labor as necessary to render the item to be repaired sound, solid, true, plumb, square, even, smooth and fully serviceable. Upon completion of such repair it must be, unless otherwise stated, rendered to such condition as to present a first class finished work, or in instances where the repaired item serves as a base for additional finish, the repaired work must be such as to permit a first class finish, to be applied without extra cost to the State. When the word "repair" is used in connection with machinery or mechanical equipment it shall mean, in addition to the above, rendering the equipment completely serviceable and efficient ready for the normal use for which it was originally intended.

g. All "time limits" stated in the Contract Documents are of the essence of the Contract. They are in calendar days.

**ART. 2. CONTRACT DOCUMENTS:**

a. The Contract Documents (See ART. 1, Par. a) are complementary. That which is called for by any one shall be as binding as if called for by all.

(1) Intent of the documents is to include all Work necessary for the proper completion of the project ready for continual efficient operation. It is not intended, however, to include any work not properly inferable.

(2) Clarification. It is assumed that the Contractor has obtained clarification of all questions which may have arisen as to intent of the Contract Documents, or assumed, or actual conflict between two or more items in the Contract Documents as required in Instructions to Bidders, Par. 7. Should the Contractor have failed to obtain such clarification as required by the Instructions to Bidders, then the Architect may direct the Work to proceed by any method indicated, specified or required by the Contract Documents in the interest of maintaining the best construction practice. Such direction by the Architect shall not constitute a claim for extra by the Contractor.

(3) "Jargon". Work described in words that have a well-known technical or trade meaning shall be held to refer to such recognized standard use.



## ART. 2. CONTRACT DOCUMENTS: (Cont'd)

(4) **Identification.** The Contract Documents shall be signed in duplicate by the State and the Contractor. In case either party shall fail to sign them then the Architect shall identify them.

b. **Drawings.** The Contractor shall do no Work without proper drawings and instructions. Drawings are in general drawn to scale, however, symbols are used to indicate materials and structural and mechanical requirements. When symbols are used the drawings are of necessity diagrammatic as it is not possible to indicate all connections, fittings, fastenings, etc. which are included as a part of the Work. Diagrammatic indication of mechanical piping, ducts, and conduit within the building is subject to adjustment in order to obtain proper grading, passage over, under or past obstructions, to avoid exposure in finished rooms and unsightly and obstructing conditions. The Contractor shall coordinate these adjustments.

(1) **Copies Furnished.** The State (D.G.S.) will furnish the Contractor without cost, fifteen (15) copies of drawings and Specifications (the same which were supplied for bidding purposes) and six (6) copies of each large scale detail prepared by the Architect.

*Additional Copies* may be obtained by the Contractor upon payment of the cost of reproduction of the drawings.

(2) **Copies on the Work.** The Contractor shall keep in the office on the job a complete set of all drawings, specifications, shop drawings, schedules, etc., in good order and available to the Architect and representative of the State.

(3) **Ownership.** All documents except identified contract set [a. (4) above] as furnished by the State remain the property of the State. They must not be used on other work but shall be returned to the State upon completion of the Work.

c. **Large Scale Detail Drawings.** The Architect shall furnish, when necessary, additional instructions, in the form of large scale developments of the drawings used for bidding, or to amplify the specifications for the proper execution of the Work. These shall be true developments of the bidding documents and reasonably inferable therefrom. The Work shall be executed in conformity therewith. [See Par. b. (1) and (1)(a) above and Par. d. (3) below.]

d. **Shop Drawings.** (Being those which are prepared by the Contractor or vendor of material.) The Contractor shall submit, for the Architect's approval, at such time as agreed (See ART. 3) shop (to include setting drawings and schedules) drawings as required for the Work of the various trades. These drawings shall be prepared in conformity with the best practice and standards for the trade concerned. Due regard shall be given to speed and economy of fabrication and erection.

All shop drawings must show the name of the building and job number as assigned by the Department of General Services.

(1) **Size of Drawings.** All shop drawings and details submitted to the Architect for approval shall be printed on sheets of the same size as the contract drawings prepared by the Architect. When a standard of a fabricator is of such size to print more than one drawing on a sheet of the size of the Architect's drawings, this is acceptable. Sheets larger than the Architect's drawings will not be accepted except when specifically permitted by the Department of General Services. (Exception to the above is made when the shop detail is supplied on a sheet of letter size 8-1/2" x 11" x 16-1/2".)

(2) **Items to be Detailed.** Shop details shall be supplied for all items which are specifically fabricated for the Work or when the assembly of several items is required for a working unit. Shop drawings are required for all reinforcing and structural steel, specially made or cut masonry units, miscellaneous metal work, specially made millwork, plaster moulds, or mouldings, marble and slate, special rough hardware and all heating, ventilating, plumbing and electrical requiring special fabrication or detailed connections including refrigeration, elevators, dumb waiters, laboratory equipment, ducts, etc.

(3) **Copies Required.** Sufficient copies shall be supplied to provide for retention by the Architect of two (2) copies for his own file and two (2) copies for the D.G.S. and such other number as the Contractor may desire for his own use.

(4) **Examination and Approval.** The Architect shall examine shop drawings with reasonable promptness, noting desired corrections, or granting approval.

(a) **Field Dimensions and Conditions.** The Architect is not responsible for the checking of dimensions or existing conditions in the field. This is the sole responsibility of the Contractor.

(b) **Resubmission.** When the Architect's notations or corrections are extensive then the Contractor shall resubmit the drawings with changes made on the drawing.

(c) **Contractor's Responsibility.** Unless the Contractor has, in writing, notified the Architect to the contrary, at the time of the submission, it will be assumed that the drawings are in conformity with the Contract Documents and do not involve any change in the contract price or any change which will alter the space within the structure or alter the manner of operation from that contemplated in the Contract Documents.

## ART. 2. CONTRACT DOCUMENTS: (Cont'd)

(d) **Architect's Notations.** Should the Contractor consider any change or notation [Par. (4)] above or drawings received in compliance with Par. c above, as increasing the cost of the Work from that contemplated in the Contract Documents, then the Contractor shall desist from further action relative to the item he questions and shall notify the Architect, in writing, within five (5) days of the additional or less cost involved. No Work shall be executed until the entire matter is cleared and a Change Order issued if such is granted or the Contractor is ordered by the State to proceed under the provisions of ART. 11. Failure of the contractor to serve written notice as above required shall constitute a waiver of any claim in relation thereto.

Similarly, should the Architect's notation or change involve less work than is covered by the Contract Documents, the Contractor shall allow the State the credit resulting from the change.

Should the Contractor consider that any notation or change made by the Architect under provisions of this paragraph, Par. d. Shop Drawings, or Par. c. above, as involving a complete change in the subcontractor's relation or the substitution of a material different from that on which the contract was based then the Contractor shall act as in Par. d. (4)(c) or (d) above.

e. **Dimensions.** The Contractor shall carefully check all dimensions prior to execution of the particular work effected. Whenever inaccuracies or discrepancies are found, the Contractor shall consult the Architect prior to any construction or demolition. Should any dimensions be missing, the Architect will be consulted and supply them prior to execution of the Work. Dimensions for items to be fitted into constructed conditions at the job will be taken at the job and will be the responsibility of the Contractor. The obvious intent of the documents or obvious requirement dictated by conditions existing or being constructed supersedes dimensions or notes which may be in conflict therewith. Whenever a stock size manufactured item or piece of equipment is specified by its normal size, it is the responsibility of the Contractor to determine the actual space requirements for setting or entrance to the setting space. No extra will be allowed by reason of work requiring adjustments in order to accommodate the particular item of equipment.

Whenever new work, building, addition or portions thereof are not accurately located by plan dimensions, the Architect will supply exact position prior to execution of the Work.

## ART. 3. SCHEDULES.

a. **For Preparation of Detail Drawings (Art. 2 Par. c. and d.).** The Contractor and the Architect shall jointly prepare a schedule, fixing the dates when such instructions and drawings will be required, reasonable time being allowed the Architect for proper preparation. Should no such schedule have been prepared then no claim for extra cost will be recognized due to delay caused in the Work.

b. **Payment Value.** Prior to application for first payment the Contractor shall submit to the Architect a schedule of the values of the various parts of the Work, including quantities, aggregating the sum of the contract. This shall be so divided as to facilitate payments to subcontractors (See Art. 31, Par. c.). The schedule shall be supported by such data as to its correctness as the Architect may reasonably require.

c. **Materials Purchased Under Allowance.** The Architect will provide schedules for all materials to be purchased from specified allowance.

d. **Painting and Color.** The Architect and Contractor shall jointly prepare the paint and color schedules. The Architect shall direct the *exact* color, texture and finish.

## ART. 4. MATERIALS.

a. **Materials include all manufactured products and processed and unprocessed natural substances required for completion of the Contract.** The Contractor, in accepting the Contract, is assumed to be thoroughly familiar with the materials required and their limitations as to use, and requirements for connection, setting, maintenance and operation. Whenever an article, material or equipment is specified and a fastening, furring, connection (including utility connections), or access hole, flashing closure piece, bed or accessory is normally considered essential to its installation in good quality construction, such shall be included as if fully specified. Nothing in these specifications shall be interpreted as authorizing any work in any manner contrary to applicable laws, codes or regulations. (See ART. 7).

(1) **Approval.** All materials are subject to the Architect's approval as to conformity with the specifications, quality, design, color, etc. No work for which approval is necessary shall be contracted for, or used, until written approval is given by the Architect. Approval of a sub-contractor as such does not constitute approval of a material which is other than that included in the specifications.

(2) **New Materials.** Unless otherwise specified, all materials shall be new.

(3) **Quality.** Unless otherwise specified, all materials shall be of the best quality of the respective kinds.

(4) **Samples.** The Contractor shall furnish for approval all samples as directed. The work shall be the same as the approved samples.

(5) **Proof of Quality.** The Contractor shall, if requested, furnish satisfactory evidence as to the kind and quality of materials either before or after installation. He shall pay for any tests or inspections called for in the specifications and such as may be deemed necessary in relation to "substitutions", Par. (8) below.



#### ART. 4. MATERIALS: (Cont'd)

(6) **Contractor's Option.** When several products or manufacturers are named in the specifications for the same purpose or use, then the Contractor may select any of those so named. However, all of the units required for a project must be the same in material and manufacture.

(7) **"Or Equal", "Equal", "Approved Equal".** These terms are used as synonyms throughout the specifications. They are implied in reference to all named manufacturers unless otherwise stated. Only materials fully equal in all details will be considered. The Department of General Services is the final judge as to equality. [See (1), (3), and (5) above, and (8) below.]

(8) **Substitutions.** Should the Contractor desire to substitute another material for one or more specified by name he shall apply, in writing, for such permission and state the credit or extra involved by the use of such material. The Architect will not consider the *substitution* of any material different in type or construction methods unless such substitution effects a benefit to the State [see (1) and (4) above].

(a) Contractor shall *not* submit for approval, materials other than those specified without a written statement that such a substitution is proposed. Approval of a "substitute material" by Architect or Engineer when the Contractor has not designated such material as a "substitute", shall not be binding on Owner, nor release Contractor from any obligations of his contract, unless Owner approves such "substitution" in writing.

(9) **Old Materials.** Old materials must not be used as substitutes for new, regardless of condition or repair, unless approved in writing.

(10) **Standard Specifications.** When no specification is cited and the quality, processing, composition or method of installation of a thing is only generally referred to, then--

(a) For items not otherwise specified below, the latest edition of the applicable American Society for Testing Materials Specifications.

(b) For items covered by the applicable portions, the National Bureau of Fire Underwriters Code.

(c) For items generally considered as plumbing and those items requiring plumbing connections, the applicable portions of the latest edition of the B.O.C.A. Code.

(d) For items generally considered as heating, refrigerating, air-conditioning or ventilating, the applicable portions of the latest edition of the A.S.H.R.A.E. Guide and Data Book published by the American Society of Heating, Refrigerating and Air-Conditioning Engineers.

(11) **Storage.** The Contractor shall confine his apparatus and the storage of materials to the "offroad" area delineated as the "Limit of Contract". He shall not load or permit any part of the structure to be loaded with a weight that will endanger the safety of the structure or any part thereof.

##### a. Explosives

Explosives shall not be stored upon any property belonging to the State.

Should the Contractor desire to use explosives on any project on State property he shall first receive written approval of the Secretary of General Services which approval will stipulate time place and quantity to be used and manner of use.

The Contractor shall assume all responsibility for injury to persons or property damage which may result from the use or transportation of explosives, as well as complying with any and all ordinances, regulation and restriction in relation to the use of explosives.

##### b. Paints, etc.

Oil base paints and inflammable liquids shall not be stored in large quantities in the building. Containers shall be limited to five (5) gallon size. Any liquid with a flash point of less than one hundred (100) shall be contained in safety cans, UL approved. Liquid with a higher flash point shall be stored in rigid cans. Glass containers shall not be used.

Oily rags, waste, etc. must be removed from the building at the close of each working day.

#### ART. 5. EMPLOYEES AND WORKMANSHIP

(See also ART. 1. Par. e. and f.)

a. **Qualification of Employees.** Only personnel thoroughly trained and skilled in the task assigned them may be employed on any portion of the Work. Any employee found to be unskilled or untrained in his work shall be removed from the Work.

(1) **Licensed Employees.** When municipal, county, state or Federal laws require that certain personnel (electricians, plumbers, etc.) be licensed, then all such personnel employed on the Work shall be so licensed.



**ART. 5. EMPLOYEES AND WORKMANSHIP: (Cont'd)**

**b. Quantity of Labor.** The Contractor shall employ on the Work, at all times sufficient personnel to complete the Work within the time stated in his bid. (See also ART. 1, Par. g.)

**c. Work Areas.** The Contractor shall confine the operations of his employees to the limits as provided by law, ordinance, permits or directions of the Department of General Services. Generally, the "off-road" area will be the same as the "Limit of Contract" line.

**d. Methods and Quality.**

(1) All workmanship shall be of good quality. Whenever the method of the Work or manner of procedure is not specifically stated or shown in the contract documents, then it is intended that the best standard practice shall be adhered to. Recommendations of the manufacturers of approved materials shall be considered as a part of these specifications and all materials shall be applied installed, connected, erected, used, cleaned and conditioned as so called for thereby. This, however, does not remove any requirement in these specifications to add to the manufacturer's recommendations. [See also ART. 4, Par. a. and Par. a.(10).]

(2) All materials shall be accurately assembled, set, etc., and when so required in good construction, shall be true to line, even, square, plumb, level and regularly spaced, coursed, etc. Under no circumstances, either in new or old work shall any material be applied over another which has not been thoroughly cleaned, sanded, or otherwise treated so as not to impair the finish, adhesion, or efficiency of the next applied item.

(3) All methods and procedure and results are subject to the Architect's approval as to finished result to be obtained. However, this is not to be interpreted as placing upon the Architect any responsibility for the "Work" management which is solely the responsibility of the Contractor.

**e. Joining of Work. (Cutting, Patching and Digging)**

(1) The Contractor shall so schedule the Work as to insure efficient and uninterrupted progress and to hold to an absolute minimum the cutting and patching of new work. All cutting, patching and digging necessary to the execution of the Work is included.

(2) The Contractor shall so schedule (to include Sub-contracts) the construction performed by each group or trade that each installation or portion of the construction shall member with and join with every other new or old Work as required for a complete installation, all according to accepted good construction practice.

**f. Superintendent.** The Contractor shall keep on his work, at all times during its progress, a competent superintendent and any necessary assistants, all approved by the Department of General Services. Prior to commencement of the Work, the Contractor shall submit in writing to the Department of General Services the name of the person it is intended to employ as Superintendent for the execution of this contract with a statement of the proposed Superintendent's qualifications. This data will be reviewed by the Department of General Services and an approval or rejection given in writing. Persons who have previously proved unsatisfactory on work executed for the State of Maryland, or who are without proper qualifications, will not be approved. Should it be necessary to change the superintendent this procedure will be repeated. A single Superintendent will be permitted to superintend two or more jobs located at the same institution or close to each other only when approved by the Department of General Services in writing. The Superintendent shall represent the Contractor. All directions given to the Superintendent shall be as binding as if given to the Contractor. Important directions shall be confirmed in writing to the Contractor. Other directions shall be so confirmed on written request in each case.

(1) Should the Superintendent be complained of by the Department of General Services for cause, he shall be removed from the Work and a new Superintendent obtained and approved as described above.

**g. Discipline.** The Contractor shall at all times enforce strict discipline and good order among his employees and shall not employ or permit to remain on the Work any unfit person. He shall enforce all instructions relative to use of water, heat, power, no smoking, and control and use of fires as required by law, the institution, or the D.G.S. Employees must not be allowed to loiter on the premises before or after job working hours.

**h. Employees' Safety.** The Contractor shall take all necessary precautions for the safety of employees on the Work, and shall comply with all applicable provisions of Municipal, State and Federal safety laws and building codes to prevent accidents or injury to persons on, about or adjacent to the premises where the work is being performed. (See ART. 8-c.)

(1) The Contractor shall designate a responsible member of his organization, on the Work, whose duty it shall be, in addition to his other duties, to prevent accidents. The name and position of the person so designated shall be reported to the Department of General Services, with a copy to the Architect, by the Contractor at the commencement of the Work.

**i. Conflict of Interest.** No employee of the State of Maryland, or any department, commission, agency or branch thereof, whose duties as such employee include matters relating to or affecting the subject matter of this contract, shall, while such employee become or be an employee of the party or parties hereby contracting with the said State of Maryland, or any department, commission, agency or branch thereof.

## **ART. 6. ROYALTIES AND PATENTS.**

The Contractor shall pay for all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the State harmless from loss on account thereof, except that the State shall be responsible for all such loss when a particular process or the product of a particular manufacturer or manufacturers is specified, but if the Contractor has information that the process or articles specified is an infringement of a patent he shall be responsible for such loss unless he promptly gives such information to the Architect or the State.

## **ART. 7. LAWS, PERMITS AND REGULATIONS.**

a. The State will file with appropriate local authority drawings and specifications and any pertinent data reasonably proper for their information. The Contractor will not be required to pay any fees to local authorities for inspection or for the privilege or right to execute the work called for thereunder.

b. The Contractor must be licensed as required by Laws of the State of Maryland, (Art. 56 Sec. 180, Annotated Code of Maryland, 1957 Edition) and must be qualified by submission and approval of a Qualification Questionnaire (D.C.S. Form 15) when requested.

c. The Contractor shall give all notices and comply with all State and Federal laws, ordinances, rules and regulations bearing on the conduct of the Work as drawn and specified. If the Contractor observes that the drawings and specifications are at variance therewith, he shall promptly notify the Architect, in writing, and any necessary changes shall be adjusted as provided in the Contract for changes in the work. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the Architect, he shall bear all costs arising therefrom.

d. The Contractor must comply with the provisions of the Workmen's Compensation Act and Federal, State and City laws relating to hours of labor.

## **ART. 8. PROTECTION OF WORK AND PROPERTY**

a. The Contractor shall continuously maintain adequate protection of all his work from damage and shall protect the State property from injury or loss arising in connection with this Contract. He shall make good any such damage, injury or loss, except such as may be directly due to errors in the Contract Documents or caused by agents or employees of the State. He shall adequately protect adjacent property as provided by law and the Contract Documents.

b. Box all trees along the way of access, also all trees surrounding the building which are liable to injury by the moving, storing and working up of materials. Use no permanent tree for attachment of any ropes or derricks. Replace and put in good condition every public way and private way, catch basin, conduit, trees, fence or things injured in carrying out this Contract, unless the same shall be permanently done away with by order of the Architect.

c. The Contractor shall erect and properly maintain at all times, as required by the conditions and progress of the Work, all necessary safeguards for the protection of workmen and the public and shall post danger signs warning against the hazards created by such features of construction as protruding nails, hod hoists, well holes, elevator hatchways, scaffolding, window openings, stairways and falling materials.

d. In any emergency affecting the safety of life, or of the work, or of the adjoining property, the Contractor, without special instruction or authorization is hereby permitted to act, at his discretion, to prevent such threatened loss or injury. However, if he is specifically instructed by proper authority he shall so act, without appeal. Any compensation claimed by the Contractor on account of emergency work shall be determined as outlined in ART. 11.

## **ART. 9. INSPECTION AND SUPERVISION OF WORK.**

a. All "Work" including the fabrication and source of supply is subject to inspection by the Architect and the Department of General Services, and such other agencies as are named in these General Conditions and/or Specifications and those agencies required by law to inspect specific items.

b. The "Work" will be executed under the supervision of the Architect who prepared the Contract Documents when such Architect has been commissioned by the State for such supervision. He will be assisted by the inspector representing the Department of General Services. When no Architect is so commissioned the Department of General Services will both supervise and inspect the project. See also ART. 32 and ART. 33.

c. The Contractor shall provide facilities for access and inspection as required in a. and b. above.

d. If the specifications, the Architect's instructions, laws, ordinances or any public authority require any work to be specially tested or approved, the Contractor shall give the Architect timely notice of its readiness for inspection, and if the inspection is by another authority, the date fixed for such inspection. Inspections by the Architect shall be made promptly and where practicable at the source of supply. Any work covered without approval of the Architect must, if required by the Architect, or the Department of General Services, be uncovered for examination at the Contractor's expense.



## ART. 9. INSPECTION AND SUPERVISION OF WORK: (Cont'd)

e. Re-examination of questioned work may be ordered by the Architect or the Department of General Services at any time. If so desired, the work must be uncovered by the Contractor. If such work be found in accordance with the Contract Documents the State shall pay the cost of re-examination and replacement. If such work be found not in accordance with the Contract Documents the Contractor shall pay such cost, unless he shall show that the defect in the work was caused by another Contractor, and in that event the State shall pay such cost.

## ART. 10. CONTRACTOR'S SUPERVISION.

(See also ART. 5, Par. f.)

a. The Contractor shall constantly maintain efficient supervision of the Work, using his best skill and coordinating ability. He shall carefully study and compare all drawings, specifications and other instructions and check them against conditions existing or being constructed on the project. He shall at once report to the Architect any error, inconsistency or omission which he may discover. (See also ART. 2, a. and e., and Instructions to Bidders, Par. 7.). The Contractor shall not be held responsible for the existence or discovery of such errors or conflicts and neither shall the adjustment of such errors or conflicts be grounds for claim for extra on the part of the Contractor unless such adjustment involves work not obviously contemplated by the Contract Documents or necessary to progress of the Work.

## ART. 11. CHANGES IN THE WORK:

a. Should it be desired at any time, or times, during the progress of the Work to make any alterations, or changes, or to add to or delete work, the State shall have the undisputed right to make such changes, omissions, additions or alterations by written order.

b. When changes, alterations, deductions or additions are so ordered, the value of any such Work shall be determined in one of the following ways:

(1) When unit prices are stated in the Contract or have been subsequently agreed upon, by application of those unit prices.

(2) When the unit price schedule does not exist or is not applicable by either of the following methods.

(a) By estimate and agreement by both Contractor and Owner, or

(b) When the Contractor and the Owner shall fail to agree upon a lump sum price the Owner shall have the right to issue an order for the Work and a correct amount shall be kept by the Contractor of the actual cost thereof, as follows:

(b-1) The actual sums paid to labor for Work made necessary by the ordered change.

(b-2) The actual sums paid for materials utilized in executing the ordered change. List prices and prices subject to discount are not considered actual.

(b-3) To the sum of items (b-1) and (b-2) above shall be added fifteen (15) per cent to cover the Contractor's overhead and profit. If, however, a Subcontractor has added fifteen (15) per cent to all or any portion of the sum of (b-1) and (b-2) above, the Contractor may add only eight (8) per cent to the portion for which the Subcontractor has added the fifteen (15) per cent.

(b-4) To the amount computed as in (b-3) above shall be added the rental of machine-power tools or special equipment, including fuel and lubricants which are necessary to execute the Work required by the change order. The rental rate to be agreed upon by the Owner and Contractor which rate generally to be maintained by the Associated Equipment Distributors of Washington, D.C., to which rates no percentages shall be added.

(b-5) Further, on Work covered by the change order the Contractor will be reimbursed for his expenditures for Workmen's Compensation Insurance, Public Liability Insurance, Social Security Taxes and Unemployment Compensation covering men actually engaged upon the Work and the actual increase cost of Bond. This without any percentage added.

(b-6) The cost of foremen and superintendents may be added in (b-1) above only when the change order makes necessary the hiring of additional supervisory personnel or makes their employment for time additional to that required by the basic contract.

(c) The computation of credits to the State shall be computed in the same manner as described above for added compensation and the two sums balanced to determine the adjusted total cost or credit. No allowance to the Contractor shall be made or allowed for loss of anticipated profits on account of any changes in the Work.

c. No order for change at any time or place shall in any manner or to any extent relieve the Contractor of any of his obligations under the Contract.

d. The Architect shall have authority to make minor changes in the Work not involving extra cost, and not inconsistent with the purposes of the building. Otherwise, except in any emergency endangering life or property,



#### **ART. 11. CHANGES IN THE WORK: (Cont'd)**

no extra work or change shall be made unless a written order from the Department of General Services signed or countersigned by the Secretary of General Services and the Architect, has been received by the Contractor. No claim for addition to the contract sum shall be valid unless so ordered.

#### **ART. 12. CLAIMS FOR EXTRA COST.**

a. If the Contractor claims that any instructions by drawings or otherwise involve, or may involve, extra cost under this Contract, he shall give the Architect written notice thereof within fifteen (15) calendar days after receipt of such instructions (See ART. 2, Par. c. and d. and ART. 11, Par. b. and ART. 26) or occurrence of an emergency. No claim shall be valid unless so made. The method of payment for such claim, if approved, shall be as detailed in ART. 11, Par. b.

b. Under no circumstances will overhead or profit be permitted as items of a claim when such overhead or profit are for periods during which a "Stop Work" order is in effect due to an act, error or omission for which the Contractor is responsible.

c. No profit or overhead which includes rental of equipment and the salaries of supervisory personnel will be allowed the Contractor for stoppage of work when written notice of such stoppage, or impending stoppage, is not given reasonably in advance to prevent such stoppage. (See also ART. 14.)

d. No claim for extra will be granted which includes cost of delays or work stoppage due to strikes, lockouts, fire, avoidable casualties or damage or delay in transportation for which the State or its agents are not responsible (See also ART. 14).

#### **ART. 13. DEDUCTIONS FOR UNCORRECTED WORK.**

a. If the Architect and State deem it inexpedient to correct work injured or done not in accordance with the Contract, an equitable deduction from the contract price shall be made therefor.

#### **ART. 14. DELAYS AND EXTENSION OF TIME.**

a. If the Contractor be delayed at any time in the progress of the work by an act or neglect of the State or the Architect, or by any employee of either, or by any separate Contractor employed by the State, or by changes ordered in the work, or by strikes, lockouts, fire, unusual delay in transportation, unavoidable casualties, or any causes beyond the Contractor's control, or by any cause which the Architect shall decide to justify the delay, then the time of completion shall be extended for such reasonable time as the Architect may decide.

b. No such extension shall be made for delay occurring more than seven days before claim therefor is made in writing to the Architect. In the case of continuing cause of delay, only one claim is necessary.

c. If no schedule or agreement stating the dates upon which drawings shall be furnished is made, (See ART. 3) then no claim for delay shall be allowed on account of failure to furnish drawings until two weeks after demand for such drawings and then not unless such claim be reasonable.

d. This article does not exclude the recovery of damages for delay by either party under other provisions in the Contract Documents.

#### **ART. 15. CORRECTION OF WORK BEFORE FINAL PAYMENT.**

a. The Contractor shall promptly remove from the premises all materials condemned by the Architect as failing to conform to the Contract, whether incorporated in the work or not. The Contractor shall promptly replace and re-execute his own work in accordance with the Contract and without expense to the State and shall bear the expense of making good all work of other Contractors destroyed or damaged by such removal or replacement.

b. If the Contractor does not remove such condemned work and materials within a reasonable time, fixed by written notice, the State may remove them and may store the materials at the expense of the Contractor. If the Contractor does not pay the expense of such removal within ten (10) days' time thereafter, the State may, upon ten (10) days' notice sell such materials at auction or at private sale and shall account for the net proceeds thereof, after deducting all the costs and expenses that should have been borne by the Contractor.

#### **ART. 16. CORRECTION OF WORK AFTER FINAL PAYMENT.**

a. Neither the final certificate nor payment nor any provision in the Contract Documents shall relieve the Contractor of responsibility or faulty materials and workmanship. Unless otherwise specified, he shall remedy any defects and pay for any damage to other work resulting therefrom, which shall appear within a period of one (1)

**ART. 16. CORRECTION OF WORK AFTER FINAL PAYMENT: (Cont'd)**

year from the date of final certificate for payment to the Contractor for work included in the contract as amended by change order if any executed prior to final inspection. The State shall give notice of observed defects with reasonable promptness. All questions arising under this article shall be decided by the Architect, subject to review by the Department of General Services.

**ART. 17. THE STATE'S RIGHT TO DO WORK.**

a. If the Contractor should neglect to prosecute the work properly or fail to perform any provision of this Contract, the State, may after three days' written notice to the Contractor without prejudice to any other remedy he may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor, provided, however, that the Architect and Department of General Services shall approve both such action and the amount charged to the Contractor.

**ART. 18. STATE'S RIGHT TO TERMINATE CONTRACT.**

a. If the Contractor should be adjudged a bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply properly skilled workmen or proper materials, or if he should fail to make payment to subcontractors, or for materials and labor, or persistently disregard laws, ordinances or the instructions of the Architect, or Department of General Services, or otherwise be guilty of a substantial violation of any provision of the Contract, then the Department of General Services, upon proof that sufficient cause exists to satisfy such action may, without prejudice to any other right or remedy, and after giving the Contractor seven days' written notice, terminate the employment of the Contractor and take possession of the premises and of all materials, tools, and appliances thereon and finish the work by whatever method may be deemed expedient. In such case the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the contract price shall exceed the expenses of finishing the Work including compensation for additional managerial and administrative services, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the State. The expense incurred by the State as herein provided and the damage incurred through the Contractor's default, shall be itemized by the Architect and a certified copy supplied to the Contractor.

**ART. 19. CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE CONTRACT.**

a. If the work should be stopped under an order of any court, or other public authority, for a period of three months, through no act or fault of the Contractor or of anyone employed by him, or if the Architect should fail to issue any certificate for payment within seven days after it is due, or the State should fail to pay the Contractor within seven days, then the Contractor may, upon seven days' written notice to the Department of General Services and the Architect, stop work or terminate this Contract and receive from the State payment for all work executed and any loss sustained upon any plant or materials and reasonable profit and damages.

**ART. 20. PAYMENTS.**

a. Payments are made on the valuation of work accomplished and on account of materials delivered on the site, for incorporation in the work which are suitably stored and protected.

b. Prior to application for first payment the Contractor shall submit to the Architect a Schedule of Values of the various parts of the Work, including quantities, aggregating the total sum of the Contract. This Schedule shall be so divided as to facilitate payments to sub-contractors in accordance with Article 31. The form of this submission shall be as the Contractor and Architect have agreed upon and shall be supported by such evidence as to its correctness as the Architect may direct. This Schedule, when approved by the Architect, shall be used as a basis for Certificates of Payment unless at a later date found in error.

c. Application for payment shall be submitted on or about the 25th day of each month but not less than thirty (30) days after the "Work Initiation Conference", nor before ten (10) days of job operation (job shut-down days excluded).

In applying for payments the Contractor shall submit a statement, based upon the Schedule, (b. above) itemized in such form and supported by such evidence as the Architect may require, showing the Contractor's right to the payment claimed.

(1) In applying for all payments, excluding the first payment and the final payment, the Contractor shall submit in addition to the above a Certificate that he has paid:

(a) All labor to date.

(b) All vendors and material suppliers in full to include all items included in his previous statement and for which he received payment from the State.



## **ART. 20. PAYMENTS: (Cont'd)**

(c) All Sub-contractors in full, less the retained 10%, to the amount included in his previous statement and for which he received payment from the State.

(2) In applying for the final payment the Contractor shall submit in addition to the statement required in the first part of Par. (c) above, the following:

(a) In all cases, the Architect may demand such evidence as will establish the State's title to materials and give reasonable assurance that causes for liens by labor and others do not exist.

## **ART. 21. CERTIFICATES OF PAYMENTS.**

a. If the Contractor has made application as above, the Architect shall, not later than the date when such payment falls due, issue to the Contractor a certificate for such amount as he decides to be properly due. In approving such partial payments there shall be retained ten per cent (10%) of the estimated amount due, as determined under ART. 20, until completion and acceptance of all work covered by the Contract.

b. No certificate issued nor payment made to the Contractor, nor partial or entire use or occupancy of the work by the State, shall be an acceptance of any work or materials not in accordance with this Contract. The making and acceptance of the final payment shall constitute a waiver of all claims by the State, other than those arising from unsettled liens, from faulty work appearing after final payment or from requirement of the specifications, and all claims by the Contractor, except those previously made and still unsettled.

c. Should the State fail to pay the sum named in any certificate of the Architect upon demand when due, the Contractor shall receive, in addition to the sum named in the certificate, interest thereon at the legal rate in force at the place of building.

## **ART. 22. PAYMENTS WITHHELD.**

a. The Architect may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any certificate to such extent as may be necessary to protect the State from loss on account of:

- (1) Defective work not remedied.
- (2) Claims filed or reasonable evidence indicating probable filing of claims.
- (3) Failure of the Contractor to make payments properly to sub-contractors or for material or labor.
- (4) A reasonable doubt that the Contract can be completed for the balance then unpaid.
- (5) Damage to another Contractor.

When the above grounds are removed, payment shall be made for amounts withheld because of them.

## **ART. 23. CONTRACTOR'S LIABILITY INSURANCE. (Revised 8-1-64)**

a. Responsibility for Damage Claims.

The Contractor shall indemnify and save harmless and defend the State and all of its representatives from all suits, actions, or claims of any character brought on account of any injuries or damages sustained by any person or property in consequence of any work performed under this contract, either by the contractor or any sub-contractor, or their employees, agents, or representatives.

b. Liability Insurance.

(1) The Contractor and/or any sub-contractor shall maintain such insurance as will protect him from claims under Workmen's Compensation Acts, U.S. Longshoremen's and Harbor Workers' Compensation Act, and the Federal Employers Liability Act by coverage with Insurance Companies or by methods acceptable to the State Insurance Commissioner and by no other method, for damages which may arise, from operations under this Contract, whether such operations be by himself or by any sub-contractor or anyone directly or indirectly employed by either of them.

(2) He shall protect himself and the State from any other claims.

(3) The limits for Bodily Injury Liability shall be not less than \$200,000/\$500,000; that is \$200,000 is the limit for injury to any one person, and \$500,000 is the limit for injury to more than one person in any accident. The minimum limit for Property Damage Liability shall be \$100,000 per accident and \$200,000 aggregate.

(4) The above policies for Bodily Injury and Property Damage Liability Insurance shall be so written as to include Contingent Bodily Injury and Property Damage Liability insurance to protect the Contractor against claims from the operations of sub-contractors.

(5) Certificates of the Contractor's insurance containing evidence of the Hold Harmless Clause protecting the State of Maryland shall be filed with the Department of General Services and shall be subject to their approval for adequacy of protection.

## **ART. 24. FIRE AND EXTENDED COVERAGE INSURANCE: (Revised 1-1-73)**

a. The contractor shall carry, at his own expense, Builder's Risk Insurance for the full contract amount against the perils of Fire, Lightning, Extended Coverage and Vandalism and Malicious Mischief, subject only to the minimum standard deductibles currently filed by the Insurance Service Office with the State Insurance Department. The State shall provide no coverage during the construction period. All policies to be written jointly in the name of the State of Maryland and that of the contractor, as their respective interests may appear.



#### **ART. 24. FIRE AND EXTENDED COVERAGE INSURANCE: (Revised 1-1-73) (Cont'd)**

The policy shall contain endorsements reading as follows:

1. This policy also covers as part of the provisional amount, architect's, engineer's, and builder's fees.
2. Permission is hereby granted for occupancy in whole or in part, pending acceptance by the owner.
3. It is the intent of this insurance to cover specifically all the work being done under the contract between the Insureds hereunder and as to such work this policy shall be primary insurance and shall not contribute or claim contribution from any other insurance being carried, which by its terms, would also cover the property covered hereunder in the absence of this insurance.
4. Coverage afforded under this policy will not be cancelled until at least fifteen (15) days prior written notice has been given to the State.
  - b. Certificates of Insurance shall be submitted to the Department of General Services for review and approval and shall be held by them for the duration of the contract. The State shall have the absolute right to terminate this contract if the policy of insurance is cancelled at any time for any reason and a new policy is not obtained by the contractor and submitted to the Department of General Services for review and approval.
  - c. The above insurance shall remain in full force and affect until such time as the State shall fully accept the work covered by this contract; said acceptance to be by written notice from the Secretary of the Department of General Services.

#### **ART. 25. GUARANTY BONDS.**

(Required when initial contract exceeds \$2,000.00)

- a. Prior to the award of contract the State will provide to the contractor for execution the proposed contract (Form DGS 3-B or DGS-14) together with copies of the Performance Bond (Form DGS-13A) and Payment Bond (Form DGS-13B). The contract and the bonds must be executed and returned to the Department of General Services for approval prior to the granting of authorization to the contractor to proceed. The premium for the Bonds shall be paid by the contractor.
- b. The Bonds shall be in the amount of the contract price.
- c. At the direction of the Department of General Services, the contractor may be required to increase the amount of the Bonds; for such additions, the contractor will be reimbursed by the State in the amount of the actual cost to the contractor.

#### **ART. 26. DAMAGES.**

- a. If either party to this Contract should suffer damages in any manner because of the wrongful act or neglect of the other party or of anyone employed by him, then he shall be reimbursed by the other party for such damage.
- b. Claims under this clause shall be made in writing to the party liable within a reasonable time at the first observance of such damage and not later than the time of final payment, except as expressly stipulated otherwise in the case of faulty work or materials, and shall be adjusted by agreement.
- c. Should the Contractor cause damage to any separate contractor on the work, the Contractor agrees, upon due notice, to settle with such contractor by agreement or refer the matter to the Department of General Services who will, in consultation with the Architect, render a decision after hearing all evidence in the matter. The Contractor shall pay or satisfy such decision.

#### **ART. 27. LIENS.**

- a. Neither the final payment nor any part of the retained percentage shall become due until the Contractor shall deliver to the State a complete release of all liens arising out of this Contract, or receipts in full in lieu thereof and, in either case, an affidavit that so far as he has knowledge or information the releases and receipts include all the labor and material for which a lien could be filed, but the Contractor may, if any sub-contractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the State, to indemnify him against any lien. If any lien remains unsatisfied after all payments are made, the Contractor shall refund the State all monies that the latter may be compelled to pay in discharging such a lien, including all costs and reasonable attorney's fee.

#### **ART. 28. ASSIGNMENT.**

- a. The Contractor shall not assign the Contract. He shall not sublet it as a whole or sublet it by trades or other portions in an amount of more than 75% of the monetary value of the Contract. The remaining 25% shall be executed by the Contractor with labor and materials directly purchased and paid for by the Contractor. Costs of insurance, overhead, supervisions, etc., may not be claimed as a portion of the 25% mentioned above. The execution of work by a subsidiary of the Contractor is not considered direct employment. The Contractor shall not assign any monies due or to become due to him hereunder, without the previous written consent of the State.

#### **ART. 29. SEPARATE CONTRACTS.**

- a. The State reserves the right to let other contracts in connection with this work. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate his work with theirs.
- b. If any part of the Contractor's work depends for proper execution or results upon the work of any other Contractor, the Contractor shall inspect and promptly report to the Architect any defects in such work that render

#### ART. 29. SEPERATE CONTRACTS: (Cont'd)

it unsuitable for such proper execution and results. His failure to so inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of his work, except as to the defects which may develop in the other contractor's work after the execution of his work.

c. To insure the proper execution of his subsequent work, the Contractor shall measure work already in place and shall at once report to the Architect any discrepancy between the executed work and the drawings.

#### ART. 30. SUBCONTRACTS. (See also ART. 28)

a. The Contractor shall, as soon as practicable and before the execution of the Contract, notify the Architect and the Department of General Services in writing, of the names of sub-contractors proposed for the principal parts of the work and for such others as the Architect may direct and shall not employ any that the Architect or the Department of General Services may object to as incompetent or unfit.

b. The Architect shall, on request, furnish to any sub-contractor, wherever practicable, evidence of the amounts certified on his account.

c. The Contractor agrees that he is as fully responsible to the State for the acts and omissions of his sub-contractors and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

d. Nothing contained in the Contract Documents shall create any contractual relation between any sub-contractor and the State.

#### ART. 31. RELATION OF THE CONTRACTOR AND SUB-CONTRACTOR.

a. The Contractor agrees to bind every sub-contractor and every sub-contractor agrees to be bound by the terms of the Agreement, the General Conditions, the Drawings and Specifications as far as applicable to his work, including the following provisions of this article, unless specifically noted to the contrary in a sub-contract approved in writing as adequate by the Department of General Services.

b. The Sub-Contractor agrees: To be bound to the Contractor by the terms of the Agreement, General Conditions, Drawings and Specifications, and to assume toward him all obligations and responsibilities that he, by those documents, assumes toward the State.

c. To submit to the Contractor applications for payment in such reasonable time as to enable the Contractor to apply for payment under Article 20 of the General Conditions.

d. To make all claims for extras, for extensions of time, and for damages for delays or otherwise, to the Contractor in the manner provided in the General Conditions for like claims by the Contractor upon the State, except that the time for making claims for extra cost is one week.

e. The Sub-contractor agrees, upon completion of his work to promptly pay all labor, material suppliers, vendors, sub-SUB-CONTRACTORS and others, to permit simultaneous final payment by the Contractor and execution of the "Waiver of Liens", D.G.S. Form 24 by the Sub-Contractor.

f. The Contractor Agrees: To be bound to the Sub-Contractor by all the obligations that the State assumes to the Contractor under the Agreement, General Conditions, Drawings, and Specifications, and by all the provisions thereof affording remedies and redress to the Contractor from the State.

g. To pay the Sub-Contractor, upon the payment of certificates, if issued under the schedule of values described in Article 20 of the General Conditions, the amount allowed to the Contractor on account of the Sub-Contractor's work to the extent of the Sub-Contractor's interest therein.

h. To pay the Sub-Contractor, upon the payment of certificates, if issued otherwise than as in f., so that at all times his total payments shall be as large in proportion to the value of the work done by him as the total amount certified to the Contractor is to the value of the work done by him.

i. To pay the Sub-Contractor to such extent as may be provided by the Contract Documents or the sub-Contract, if either of these provides for earlier or larger payments than the above.

j. To pay the Sub-Contractor on demand for his work or materials as far as executed and fixed in place, less the retained percentage, at the time the certificate should be issued, even though the Architect fails to issue it for any cause not the fault of the Sub-Contractor.

k. To pay the Sub-Contractor a just share of any fire insurance money received by him, the Contractor, under Article 24 of the General Conditions.

l. To make no demand for liquidated damages or penalty for delay in any sum in excess of such amount as may be specifically named in the sub-contract.

m. That no claim for services rendered or materials furnished by the Contractor to the Sub-Contractor shall be valid unless written notice thereof is given by the Contractor to the Sub-Contractor during the first ten days of the calendar month following that in which the claim originated.



#### ART. 31. RELATION OF THE CONTRACTOR AND SUB-CONTRACTOR: (Cont'd)

- n. To give the Sub-Contractor an opportunity to be present and to submit evidence in any matter involving his rights.
- o. The Contractor and the Sub-Contractor agree that nothing in this Article shall create any obligation on the part of the State to pay to or to see to the payment of any sums to any Sub-Contractor.

#### ART. 32. ARCHITECT'S STATUS.

- a. The Architect shall have general supervision and direction of the work. He is the agent of the State only to the extent provided in the Contract Documents and when in special instances he is authorized by the State so to act, and in such instances he shall upon request, show the Contractor written authority. He has authority to stop work whenever such stoppage may be necessary to insure the proper execution of the Contract.
- b. As the Architect is, in the first instance, the interpreter of the conditions of the Contract and the judge of its performance, he shall side neither with the State nor with the Contractor, but shall use his powers under the contract to enforce its faithful performance of both.
- c. In case of the termination of the employment of the Architect, the Department of General Services shall appoint a capable and reputable Architect, against whom the Contractor makes no reasonable objection, whose status under the Contract shall be that of the former Architect; or at its own discretion the Department of General Services may assume the role of Architect.

#### ART. 33. ARCHITECT'S DECISIONS

- a. The Architect shall, within a reasonable time, make a decision on all claims of the State or Contractor and on all other matters relating to the execution and progress of the work or the interpretation of the Contract Documents.
- b. The Architect's decisions, in matters relating to artistic effect, shall be final if within the terms of the Contract Documents.
- c. Except as otherwise expressly provided in the Contract Documents, all the Architect's decisions are subject to review by the Department of General Services.

#### ART. 34. CASH ALLOWANCES.

- a. Whenever an allowance is mentioned in the specifications then the Contractor shall include in his Contract sum the entire amount of such specified allowances. The expenditure of these allowances is at the Architect's direction. However, the allowance expenditure is limited to items properly inferable from the title of the allowance. Unexpended balances are to revert to the State. The cost of installation of materials purchased with these specified allowances and other expenses, and Contractor's profit are not included in the allowance. The Contractor shall install all material purchased under allowances and shall include in the Contract sum a sufficient amount, in addition to the allowance to cover the installation, other costs and profit.

#### ART. 35. PROGRESS PHOTOGRAPHS.

- a. The Contractor shall submit monthly to the Department of General Services 8" x 10" photographs taken on or about the first of each month showing the status of the work. Only one print of each negative is necessary but the negatives should be sufficient in number to properly record the work. (No more than six successful negatives will be required per month.)

#### ART. 36. INTERLOCKING CONTRACTS.

- a. The attention of the Contractor and of all Sub-Contractors is specifically called to the necessity of reading the specifications covering items of the work which connect with or are dependent upon the work specified under each heading, and each Contractor executing the work called for thereunder shall be responsible for arranging for proper provision for connection and coordinating his work with such other items.

#### ART. 37. MARYLAND SALES TAX.

- (a) The Retail Sales Tax of the State of Maryland must be paid on all purchases.

#### ART. 38. EMPLOYMENT POLICY.

- a. Acceptance of a contract based on these specifications constitutes agreement by the Contractor to comply with State policy as established by joint Resolution No. 16 of the General Assembly of 1958, which is:

"That on all public works being paid for in whole or in part with State or other public funds, preference shall be given to available persons who have been residents of Maryland for a period of at least six (6) months



#### ART. 38. EMPLOYMENT POLICY: (Cont'd)

immediately prior to availability of positions for employment of laborers, mechanics and others, not including supervisory personnel not to exceed ten percent (10%) of the total working force."

b. The contents of Section 7A to Article 78A of the Annotated Code of Maryland is called to the attention of the Contractor and Sub-contractors, which is as follows:

"7A(a) No contract for any construction work subject to Section 7 of this Article shall be awarded to any contractor unless the contract contains provisions obligating the contractor not to discriminate in any manner against any employee or applicant for employment because of race, creed, color or national origin and obligating the contractor to include a similar clause in all sub-contracts, except sub-contracts for standard commercial supplies or raw materials. In addition, the contractor and sub-contractor shall agree to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of the non-discrimination clause."

"(b) Failure to include such a contract provision renders any contract void *ab initio*, but any party shall be entitled to the reasonable value of services performed and materials supplied. However, the State may elect to compel the performance of any contract under this section not containing the non-discrimination provisions, but recovery against the proper party shall be limited to the reasonable value of services performed and materials supplied."

"(c) Where the contractor wilfully fails to comply with the non-discrimination provisions the State may, where the contract is still executory in part, compel continued performances of the contract, but it shall be liable only for the reasonable value of services performed and materials supplied from the date that the breach of contract was discovered or should have been discovered, and any sums previously paid by the State under the contract, shall be set off against the sums to become due as the contract is performed."

"(d) If the sub-contractor wilfully fails to comply with the non-discrimination provisions the contractor may avoid the contract note and shall be liable only for; the reasonable value of the services performed and materials supplied."

"(e) Any person, whether an employee, prospective employee or not with information concerning violations of the requirements of this section may inform the Board of Public Works which shall cause an immediate investigation of the charges. If the Board concludes that the charges are true it shall invoke the remedies set out in this section."

c. It is understood that the provisions of Title VI of the Civil Rights Act of 1964 are hereby included in this contract to the end that no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or otherwise subjected to discrimination under this Agreement. The Contractor agrees to make such reports and to maintain and make available such records as may be required to insure compliance with Art. 38, par b. and c; this means permitting access by appropriate State or Federal officials during normal business hours to such facilities, records and other sources of information as may be pertinent to ascertain compliance with the regulations.

d. The Contractor, Sub-contractor or agent of either, insofar as possible, shall secure labor through the Maryland State Employment Service of the Maryland Department of Employment Security, except where the Contractor has entered into a collective bargaining agreement under which labor is to be provided by the union, the Contractor is not required to conform to these provisions unless the Contractor and the union arrange with the Maryland State Employment Service for referral of such labor as they may mutually agree shall be referred. The Contractor shall be the sole judge of the competency or fitness and for satisfactory service of any labor referred to him by the Maryland State Employment Service.

#### ART. 39. PREVAILING WAGES.

a. All contracts in the amount of \$500,000 or more shall be subject to the provisions of ART. 100, sections 96 through 107, Annotated Code of Maryland (1964 replacement Volume as amended). Where an original contract is in an amount less than \$500,000 the terms of Article 100 shall not apply, even where subsequent change orders shall increase the total contract in excess of \$500,000. Wage rates applicable to projects of \$500,000 or more are attached to the specification.

b. The contractor shall submit two complete copies of his payroll records and the payroll records of each of his subcontractors—one copy to the Department of General Services and the second to the Commissioner of Labor and Industry, 301 West Preston Street, Baltimore, Maryland 21201, where they will be available for inspection during regular business hours. These payroll records must be submitted within two weeks after each payroll period, and shall contain the following employee information: name, address and social security number; work classification; hours straight time and overtime worked each day; total hours worked; rate of pay; and gross amount earned. The contractor shall be responsible for the submission of all sub-contractors' payroll records covering work performed directly at the work site. Each copy of the payroll records shall be accompanied by a statement signed by the contractor or the subcontractor, as the case may be, indicating that the payroll records are correct, that the wage rates contained therein are not less than those established by the Commissioner as set forth in the contract, that the classification set forth for each workman or apprentice conforms with the work he performed, and that the contractor or the subcontractor, as the case may be, has complied with the provisions of this section.

**ART. 39. PREVAILING WAGES: (Cont'd)**

c. If the contractor is delinquent in submitting his or any of his subcontractors' payroll records, processing of partial payment estimates may be held in abeyance pending receipt of the payroll records. In addition, if the contractor is delinquent in submitting his or any of his subcontractors' payroll records, the contractor shall be liable to the contracting public body for liquidated damages. The liquidated damages shall constitute the sum of ten dollars (\$10.00) for each calendar day that the payroll records are late.

*Published by*

**WESTCOTT COMPUTYPE, INC.**  
20-22 EAST PRESTON ST.  
BALTIMORE, MARYLAND 21202  
PHONE - 837-2656  
837-3444

**REVISED TO JANUARY 1, 1973**



## ALTERNATIVES

The General Conditions, any Supplementary General Condition and Section I. General Requirements are hereby made part of the Alternatives.

- A. ALTERNATE #1 - under this alternate the Contractor shall state in his proposal the amount of money to be added to the Base Bid for the following:

"Build four (4) fireplaces with chimneys in the East Barracks as shown on the drawings. (Chimneys and fireplaces shall be identical to those built in the West Barracks)"

- B. ALTERNATE #2 - under this alternate the Contractor shall state in his proposal the amount of money to be added to the Base Bid for the following:

"Regrade site around the West Barracks as shown on Drawing #1."

## SECTION 1. GENERAL REQUIREMENTS

### A. 1. General Description

a. The work to be done under this Contract consists of the furnishing of all services, equipment, materials and labor necessary to complete:

EAST AND WEST BARRACKS  
FOR  
FORT FREDERICK STATE PARK  
WASHINGTON COUNTY, MARYLAND

all as more particularly set forth in the Drawings, Specifications, and other Contract Documents.

b. The work shall also include the required mechanical and electrical work, and all required site work, as indicated on the Drawings and/or specified.

c. The work being submitted to contractors for a Base Bid hereinafter described and incorporated in the Special Form of Proposal for the project.

### 2. Drawings and Specifications:

a. The work shall be executed in accordance with the Drawings and Specifications. The drawings and specifications, which will be, if required, supplemented and explained by scale and full size details, diagrams, etc., and further by directions and instructions of the Architect.

#### b. The Drawings:

DWG. No. 1	SITE PLAN
DWG. No. 2	FLOOR PLANS & ELEVATIONS
DWG. No. 3	SECTION & DOOR & WINDOW DETAILS
DWG. No. 4	STAIR & OTHER DETAILS

DWG. NO. ME1 MECHANICAL & ELECTRICAL PLANS & DETAILS

### 3. Existing Conditions:

The Bidders are required to visit the site to verify all existing conditions.

### 4. Surveys and Levels:

The Contractor shall employ and pay for the services of a competent engineer who shall lay out all lines and levels for this work and shall make all required checks of lines and levels during the progress of the work.



## SECTION 1. GENERAL REQUIREMENTS (CONT'D)

### 5. Procedure:

a. The Contractor shall cause as little inconvenience to the existing surrounding areas as possible. He shall confine his activities to within the Project Limits, as shown on the Site Plan.

b. All electrical and mechanical shut-downs shall be of short duration and at an acceptable time. Shut-downs shall occur only when permitted by the office of the Park Superintendent.

6. The General Conditions and application requirements of Section 1 apply to all Sections of this Specification.

### B. TEMPORARY WORK & CONSTRUCTION

#### 1. General:

a. The work under this Section shall include all necessary temporary items required in good safe construction practice and administration of the project. Any or all of the items may be required in conjunction with work of permanent nature described in any and all other sections of the specifications.

b. All temporary work except as specifically stated shall be removed by time of final acceptance of the project.

#### 2. Products, Material and Equipment:

##### a. Project Sign:

(1) The Contractor shall erect one (1) sign on project site where directed.

(2) Sign shall be six (6) feet by eight (8) feet in size, constructed of three quarter (3/4) inch thick waterproof plywood and supported on six (6) inch by six (6) inch posts with adequate bracing. Sign shall be painted two coats and lettered as shown on drawings with name of successful contractor added.

(3) No other signs shall be erected on the project site. Maintain and protect sign during the construction and upon completion of the project remove from site.

b. Protection of Work and Property: See General Conditions, Art. 8.

##### c. Safety Precautions:

(1) Guard Rails: See Art. 8, General Conditions.

(2) Night Lighting: Provide and maintain all necessary temporary night lighting devices as may be required to properly mark hazards and obstructions in general compliance with Art. 8, General Conditions.

## SECTION 1. GENERAL REQUIREMENTS (CONT'D)

(3) Signs of Warning: Provide as required by General Conditions, Art. 8, in particular.

d. Ramps for Passage of Persons and Materials: Provide as necessary for construction, safety or inspection.

e. Lifting Devices for Materials: Supply all cranes, lifts, hoists, etc., for the proper and efficient movement of all materials. All shall be provided with proper guys, bracing, safety devices, etc., as required by law and/or good practice. See Art. 8, General Conditions for restrictions.

f. Ladders: Provide as necessary for safe and easy access.

g. Scaffolds: Provide substantially constructed scaffolds at proper heights and of appropriate strength and size to accommodate the work of the various trades.

h. Temporary Floors: If necessary to the ease and safety of construction.

i. Protection of Work, Storage and Transportation of Materials:

(1) Sheds and Platforms: Waterproof shelter must be provided for the storage of cement and all other materials subject to spoilage. Lumber must be stored off the ground and kept dry. Platforms must be provided for the storage of materials likely to be stained if improperly stored.

(2) Transportation: All materials shall be so crated, packed, packaged, blocked and otherwise protected during transport and handling to prevent staining, chipping or any other damage. This shall include the provision of any necessary lifting devices or machines, and the skilled personnel to operate such machines.

(3) Protecting Work in Place: Provide necessary protection of completed work to prevent any and all damage.

### 3. Execution:

#### a. Laying Out of Work:

(1) Wherever the Scope of Work includes the construction of new detached structures, installation of utility lines where points of connection are not previously established, grading, roads, and/or walks, the Contractor shall employ a competent instrument man to lay out all lines and levels for all the Work. Competency of the instrument man shall be judged by the Department of General Services and departmental approval is required in the same manner as for Superintendent --see General Conditions Art. 5, par. f. Responsibility for accuracy of layout is the responsibility of the Contractor.

(2) The State will supply a bench mark. When measurement to existing bench or control point exceeds 300 feet, the State will supply a bench mark within 300 feet of the project.



SECTION 1. GENERAL REQUIREMENTS (CONT'D)

(3) Batter boards of suitable materials substantially constructed shall be erected at all corners of the building and interim points as necessary. Grades and points for line shall be clearly marked. Batter boards shall be maintained until no longer needed.

(4) Similar batter boards or line stakes shall be provided for all utility lines at all bends and in no case more than one hundred feet to another.

b. Temporary Water and Electric Service:

(1) It is the Contractor's responsibility to provide water and electricity as he may require during construction at the job site.

(2) The Contractor shall provide all necessary temporary facilities and equipment from point of supply to and about the project.

(a) The route of these lines must be approved by the Department of General Services.

(3) Water: Will be supplied at an approved existing connection point without charge. However, the water shall not be wasted.

(4) Electric:

(a) Furnish and install temporary construction equipment at the job site. <sup>elec.wiring & apparatus</sup> to operate

(b) The installation shall be in accordance with the requirements of the Potomac Edison Power Company and the Contractor shall pay all costs incurred for the construction of temporary electric service and consumption of electrical energy used.

(5) Temporary Heat: Provide heating units, fuel, tarpaulins, and other items to accomplish the requirements of the various trades.

(6) Temporary Door and Window Bucks: Provide all necessary temporary bucks as required for efficient construction.

(7) Temporary Door and Window Closures: Provide as necessary to protect the work of the various trades from theft and damage.

(8) Temporary Office and Privy:

(a) The Contractor shall provide an office suitable for the use of persons required to inspect the work. He shall provide it with telephone and heat and keep it clean.

SECTION 1. GENERAL REQUIREMENTS (CONT'D)

(b) The Contractor will provide and maintain a suitable sanitary privy for use of his workmen, to be placed where directed. At the completion of the Work it shall be removed and the premises left clean.

(9) Clearing and Cleaning Up: The Contractor shall at all times keep the premises free from accumulation of waste materials and rubbish. At the completion of the Work he shall remove all rubbish from and about the building and remove from and about building all his tools, scaffolding and surplus materials and shall leave the work completely clean.



## SECTION 2. SITE WORK

Work under this Section shall include, but is not limited to the following items: excavations, ground poisoning, gravel fill.

### A. EXCAVATIONS

1. The site of Fort Frederick is a historic site. All excavations and disturbance of the ground for construction should be approved by the State Archeologist:

MR. TYLER BASTIAN  
State Archeologist  
Maryland Geological Survey  
The Johns Hopkins University  
Baltimore, Maryland 21218

2. The Contractor should notify the Architect at least 7 days before he plans to break ground for the construction.

3. The entire excavation process should be made accessible for the State Archeologist or his representative and the Architect for examination of possible historical remains. Any delay in construction caused by these examinations will be considered additional days to the contract time at no fault of the Contractor.

4. Trees left on the building site are to remain.

5. Trees to be removed, cut into length for fireplace and stored on Park site, where directed.

6. Excavations are restricted to the areas shown on the drawings:

- a. Crawl space of East and West Barracks.
- b. Foundations and footings of structures.
- c. Utility lines.

7. The excavated earth should be removed from inside of Fort and stockpiled within the State Park as directed by Park Superintendent.

8. Take up existing stone foundations where Barracks will be reconstructed; clean and reuse stone at new foundations and chimneys as shown on the drawings.

9. Do not grade site! Build foundations to existing site conditions. (i.e., Finish First Floor Elevation is 1'-0" above the highest point of existing grade at the building line.)

10. The bottom of all excavations for column footings and wall trenches shall be perfectly level.

11. No filling will be permitted under any footings, under any circumstances; should excavations be made too deep they shall be filled to the required level with concrete at the Contractor's expense.

## SECTION 2: SITE WORK (CONT'D)

12. Should the bottom of the excavations be made soft by rain or other water, this subcontractor shall remove soft soil before laying concrete.

13. Unsuitable materials encountered in excavation below the bottom of subgrade shall be removed.

14. Rock or boulders that cannot be removed with a  $\frac{1}{2}$  cu. yd. bucket power shovel will be considered as rock excavation, and will be paid for on a unit price basis, as elsewhere mentioned.

15. All suitable materials removed from excavation shall be used as far as practicable at such other places on the work as may be necessary. Unsuitable materials shall be disposed of to the satisfaction of the Architect. Excavated materials not required for filling or grading shall be removed from the site.

16. If unfavorable earth conditions are encountered at the footing levels, this condition shall be immediately reported to the Architect, who shall determine the method of procedure and so advise the Contractor. Charge for extra work and deductions shall be made in accordance with the unit prices named in the contract.

17. All excavation work shall be inspected and approved by the Architect before starting foundations.

18. When freezing temperature may be expected, excavation shall not be made to full depths indicated, unless footings can be poured immediately after excavating work is completed; if the excavations have been carried to the required depths and concrete cannot be immediately deposited, the bottoms of excavations shall be protected from frost by suitable means. Any protective covering so placed shall be removed immediately before concrete footings are placed.

19. All excavations must be kept free from water at all times and the Contractor shall provide and maintain pumps, power and attendants for this purpose.

### B. GROUND POISONING

1. Materials: One of the following soil poisons shall be used to prevent attack by subterranean termites:

- a. Benzine hexachloride, 0.8% in water emulsion.
- b. Chlordane, 1.0% in water emulsion.
- c. Dieldrin, 0.5% in water emulsion.

#### 2. Application:

a. Under Slabs: Apply 1 to 1-1/2 gallons per 10 sq. ft. as overall treatment under the slab or, if application is made after the laying of a washed and ungraded gravel fill or an absorbent material



## SECTION 2. SITE WORK (CONT'D)

such as cinders, increase rate of application to 2 gallons per 10 sq. ft. At points where heating ducts or plumbing pipes pierce the slab or at other places where the slab is broken, increase the rate of application to 4 gallons per 10 sq. ft. Pour slab as soon after treatment as possible.

b. At Foundation Walls: In the foundation wall trench on each side of the foundation wall for a distance of one foot, apply poisoning at a rate of 2 gallons per 5 lineal feet, per side, one-third of the application being made before any backfill is installed, one-third when half of the backfill is installed and the remaining poisoning when the trench is virtually filled.

### C. GRAVEL FILL UNDER CONCRETE SLABS ON GROUND

Washed gravel or crushed stone all passing 1-1/2" screen, all retained by No. 4 screen, thoroughly compacted to smooth level surface, 4" minimum thickness.

### SECTION 3. CONCRETE

Work under this section shall include, but is not limited to the following items: Formwork, Concrete Reinforcement, Cast-in-Place Concrete.

#### A. FORMWORK

1. This work shall conform to Chapter 6 (ACI 318-71) result in a final structure which conforms to the shape, lines and dimensions of the members as called for on the plans, and shall be substantial and sufficiently tight to prevent leakage of concrete. They shall be properly braced and/or tied together so as to maintain position and shape.

2. Resin overlaid plywood, 5/8" minimum.

3. Tape joints.

4. Apply two coats epoxy surfacing before pouring.

5. Do not place metal within 1-1/2" of exposed faces.

#### B. CONCRETE REINFORCEMENT

1. Reinforcing steel shall be new billet steel of intermediate grade and shall conform to the requirements of the "Standard Specification for Billet-Steel Concrete Reinforcement Bars" of intermediate designation ASTM A615.

2. Welded Wire Fabric shall conform to the requirements of the "Standard Specifications for Cold Drawn Steel Wire for Concrete Reinforcements". Serial designation A-82 of the ASTM.

3. Concrete slabs on the plans shall be reinforced with 6x6 6/6 gauge wire mesh at 1-1/2" from top of the slab, unless designated otherwise. Place wire mesh, lapped 6".

4. Reinforcing shall be free from rust, scale, grease, clay or other coatings and foreign substances which may impair their bond with concrete.

#### C. CAST-IN-PLACE CONCRETE

##### 1. Materials:

a. Cement shall be standard brand of Domestic Portland Cement, which meets the standards of the American Society for the Testing of Materials (A.S.T.M.). Portland cement (ASTM C-150), Type 1.

b. Aggregate shall conform to "Specifications for Concrete Aggregates" (ASTM C-33) or to "Specifications for Light-Weight Aggregates for Structural Concrete" (ASTM C-330). Maximum size of aggregate shall be not larger than one-fifth of the narrowest dimension between sides of the forms and the reinforcing bars, nor larger than three-fourths of the minimum clear spacing between reinforcing bars.



### SECTION 3. CONCRETE (CONT'D)

c. Water shall be clean, fresh and free from injurious amounts of oils, acids, alkalies, salts, or organic matter or other substances.

d. Chemical Admixtures shall conform to the requirements of the "Standard Specification for Chemical Admixtures for Concrete". Designation C494 of the ASTM.

2. DESIGN MIX: 3000 p.s.i. throughout.

3. Proportions of Concrete.

a. The proportions of cement and water shall have a maximum water cement ratio as called for in Table 4.2.4 (ACI 318-71) for non-air entrained concrete and air-entrained concrete as follows:

Class	Compressive Strength	Non-Air-Entrained Concrete U.S. Gal/94# bag	Air-Entrained Concrete U.S. Gal/94# bag
A	3000 p.s.i.	6.6	5.2

b. Air content shall be maintained at 5 to 6 percent of volume.

c. The proportions of aggregate to cement shall be such as to produce a mixture which will work readily into the corners and angles of the forms and around reinforcement with the method of placing employed on the work, but without permitting the materials to segregate or excess free water to collect on the surface. The methods of measuring concrete materials shall be such that the properties can be accurately controlled and easily checked at any time during the work.

4. Testing of Concrete.

a. All materials and equipment used in the construction shall be subject to adequate inspection and testing in accordance with accepted standards. Test of concrete shall be made in accordance with ACI requirements except that one set of four cylinders shall be made for each 100 cubic yards or fraction thereof of concrete placed in any operation. The tags and test reports will indicate date, location of pour, slump and supplier and design strength.

(1) Two (2) cylinders of each set shall be tested at seven days of age. The second two (2) cylinders shall be tested at 28 days of age.

(2) Testing of the materials, equipment, and concrete cylinders will be performed by a laboratory or testing agency selected by the Owner at the expense of the Contractor.

### SECTION 3. CONCRETE (CONT'D)

b. Failures - If any test indicates weak concrete, the Contractor shall take immediate action to correct the proportions of the concrete mix or correct conditions which were responsible for the failure. Members in which the defective material was used shall be field tested at the Contractor's expense and if such tests show the strength of these members to be inadequate they shall be removed and replaced at the Contractor's expense. Load test shall be made in accordance with Chapter 2, "Load Tests of Structures" of the "ACI Standard Building Code Requirements for Reinforced Concrete" (ACI 318-71), 1971.

c. Slump Tests - Slump tests shall be made by the Contractor to determine consistency of fresh concrete and to check uniformity of concrete from batch to batch. Slump tests shall be made as follows:

- (1) First batch of concrete each day.
- (2) Wherever consistency of concrete appears to vary considerably from normal.
- (3) Whenever cylinders are made.

All slump tests shall be made in accordance with ASTM Specification C-143.

The allowable slump limits shall be between 3" and 6". If the mix does not meet this requirement, it shall be made to do so by altering the amount of fine aggregate in the mix and not by changing the water-cement ratio. This adjustment shall be made at the "batching plant" no materials shall be added at the site. Tests should be made by the concrete supplier prior to beginning delivery to determine the proportions of aggregate required to produce the slump specified above.

5. DELIVERY, STORAGE, HANDLING: All new materials delivered, stored and handled so as to prevent inclusion of foreign materials or damage of materials by water or breakage. Packaged materials delivered and stored in original packages until ready for use. Packages or materials showing evidence of water or other damage to be rejected.

#### 6. Concrete Mixing and Placing:

a. Concrete shall be mixed and placed according to "Recommended Practice for Measuring, Mixing and Placing Concrete" (ACI 614) and Chapter 5 ACI 318-71.

b. No mix placed more than one hour after water added.

c. Accelerating agents prohibited, absolutely.

d. Convey and place so as to prevent separation of ingredients.

e. Place in horizontal layers and thoroughly puddled and tamped to secure solid, homogeneous mass.



SECTION 3. CONCRETE (CONT'D)

- f. Deposit continuously until entire section completed.
- g. Compact with mechanical vibrator to full depth of each layer.
- h. Remove all foreign matter and water from footing trenches before placing.
- i. Secure architect's approval of trenches before pouring footings.
- j. No concrete placed on frozen ground.
- k. Place concrete only when temperature is 40°F. and rising unless approved by architect.
- l. Otherwise, if approved, heat and maintain heat in all material to 50°F. minimum for 72 hours.

7. Curing: Concrete shall be maintained above 50°F and in a moist condition for at least 7 days after placing (3 days for high early strength concrete). Adequate equipment shall be provided for protecting the concrete during freezing or near-freezing weather. During hot weather, steps shall be taken to reduce concrete temperature and water evaporation by proper attention to ingredients, production methods, handling, placing protection and curing.

## SECTION 4. MASONRY

Work under this Section shall include, but is not limited to the following items: Mortar, Brick Masonry, Brick Pavers, Concrete Unit Masonry, Rough Stone, Flagstone, Flue Lining.

### A. MORTAR

1. All mortar shall conform to the "tentative Specifications for Mortar for Unit Masonry" (ASTM C-270).

2. All ingredients shall meet the appropriate ASTM Specifications as follows:

a. Portland Cement (ASTM C-150 or C-175).

b. Lime (ASTM C-5 or C-207).

c. Sand (ASTM C-144).

d. Water used in mixing shall be clean and fit to drink.

3. For Hollow Units Below Grade: 1 part Portland Cement, 1/4 part lime paste, not more than 3 parts sand. For Brick and Hollow Units and Stonework, Generally: 1 part Portland Cement, 1 part lime paste, not more than 6 parts sand; or 1 part masonry cement and not more than 3 parts sand.

4. Mixing: Proportion by volume, mixing cement and sand, then lime, then water. All mortar shall be thoroughly machine mixed for a period of at least 5 minutes after all materials have been placed in a mixer designed for this purpose.

5. Time Limit - All mortar shall be used and placed in final position within 2 1/2 hours after mixing when air temperature is 80 deg F or higher, and within 3 1/2 hours when air temperature is less than 80 deg F. Mortar not used within these time limits shall be discarded.

6. Color mortar with yellow ochre to the Architect's approval.

### B. BRICK MASONRY

1. Brick: All brick for exterior and interior work shall be modular in dimension (Nominal dimension including standard mortar joint for all dimensions shall be 2 3/4" x 4" x 8 1/2"). Facing brick shall be used for all exposed brick. Brick shall be of quality equal to Calvert, Type: Handmade sand moulded as manufactured by the Cushwa Brick and Building Supply Company, or brand 1776, Type: moulded as manufactured by the Glen-Gery Corporation. Colors will be selected by Architect.

2. Fire Brick shall conform to ASTM C-71 Standards.



#### SECTION 4. MASONRY (CONT'D)

3. Mortar Joints: Standard thickness of mortar joints for both horizontal and vertical joints shall be  $3/8$ ". Vertical joints shall be filled to full face thickness and shall be shoved tight. Full mortar bedding shall be used for all brick joints. Furrowing shall not be permitted. Mortar joints shall be struck off flush with wall surface.

#### 4. Workmanship:

a. All chimneys shall be true and plumb and built to the thickness indicated on the plans. Where no bond or pattern is indicated, the wall shall be laid in bonded courses accurately spaced and with each course breaking joints with the course next below. Each unit shall be shoved into position and adjusted to its final position while mortar is still soft.

b. Prohibited practices: "Buttering" corners of units; throwing mortar scrapings into joints; slushing; deep or excessive "furrowing" of bed joints; shifting position of units placed by tapping or hammering.

5. Sample Panel: The Contractor shall erect on the site of the project, where it will remain undisturbed until completion of the job, a sample panel 4 ft. by 4 ft. minimum size, using the brick masonry units, bond or pattern and the kind of joints to be employed in the project. Upon approval of the sample panel by the Architect, subsequent work shall conform to same.

#### 6. Protection:

a. Cold weather: No brick shall be erected when the temperature is 35 degrees F or below or when the temperature is 40 degrees F and falling, except by written permission of the Architect. No frozen work shall be built upon. Masonry shall be protected from freezing for a period of 48 hours after being laid.

b. General: Surfaces of masonry not being worked on shall be properly protected at all times. At the stoppage of work at any time, the top of construction shall be covered with a strong waterproof membrane well secured in place to prevent rain from entering the wall. Adequate provisions shall be made during construction to prevent damage from wind.

7. Cleaning Masonry: Masonry joints pointed or repointed where necessary; surfaces thoroughly brushed or scraped free of dirt, mortar or plaster and foreign materials. Discolorations and other objectionable surface defects thoroughly removed. Secure approval of Architect before cleaning exposed work. Use no acid.

## SECTION 4. MASONRY (CONT'D)

### C. BRICK PAVERS

1. Brick Pavers shall be equal to Calvert Sand Moulded Brick Paver, as produced by Victor Cushwa & Sons, Inc., Williamsport, Maryland.

- a. Brick shall conform to ASTM C216.
- b. Brick shall be Grade SW.
- c. Color shall be selected by Architect.

2. Brick Pavers setting Bed: 1 part Portland Cement, 3 parts sand. Coloring shall be added to the Architect's approval.

3. 4' x 4' sample panel is required.

4. Layed in diagonal-flat pattern as shown on drawings.

### D. CONCRETE UNIT MASONRY

1. Concrete Blocks: Concrete blocks shall be modular in dimensions. Units shall be sound and free from cracks, chipped edges or other defects that would interfere with their proper setting or impair the strength or durability of the construction. Hollow rectangular concrete units shall conform to "Standard Specifications for Hollow Load-Bearing Concrete Masonry Units" (ASTM designation C-90-70). All concrete masonry units shall be delivered to the job site in an air-dry condition with a moisture absorption ratio not to exceed 30 when tested in accordance with Federal Specifications. All block below finish floor level shall be grade N-1.

2. Workmanship: All masonry walls shall be true and plumb and built to the thickness and to the bond or pattern indicated on the plans. The walls shall be laid in straight uniform courses accurately spaced and with each course breaking joints with the course next to its final position while mortar is still soft. Any unit disturbed after mortar has stiffened shall be removed and relaid with fresh mortar.

3. Mortar joints: Standard thickness of mortar joints for both horizontal and vertical joints shall be 3/8 inch. Vertical joints shall be filled to full face shell thickness for concrete masonry units and shall be shoved tight. Full mortar bedding shall be used above any solid surface. Furrowing is not permitted.

### E. ROUGH STONE

1. Native sandstone shall be used for the top of exterior wall, top of post foundations and for the fireplaces up to the attick level.

2. Existing stone foundations may be cleaned and reused where practical.

#### SECTION 4. MASONRY (CONT'D)

3. Mortar shall be used as described in Part A of this Section.
4. All bedding and joints shall be full and stones shoved and fit tight in wall.
5. All joints shall be struck off flush with wall surface.
6. Stones should be coursed at approximately 2'-6" vertically.
7. Rubble work and roughly squared stone work is layed up with field stone or rough quarry stone. All hand dressing and rough squaring shall be done in the field by masons.
8. A 4' x 4' (min.) sample panel is required.
9. Color will be selected by Architect.
10. Protection: as specified in Part B, #6 of this Section.
11. Cleaning: as specified in Part B, #7 of this Section.
12. Delivery, Storage and Handling: as specified in Part C, #5 of Section 3.

##### F. FLAGSTONE

1. Native sandstone shall be used for the hearts of fireplaces.
2. 2½" minimum thickness, layed in irregular (fitted) or seim-irregular pattern.
3. Mortar thickness shall be 1½" (min.) and conform to the standards described in Part A of this Section.
4. Joints shall be no more than 1½" wide and pointed flat.
5. An approximately 4' x 4' sample panel is required.
6. Color of stone and mortar will be selected by Architect.
7. Protection: as specified in Part B, #6 of this Section.
8. Cleaning: as specified in Part B, #7 of this Section.
9. Delivery, Storage and Handling: as specified in Part C, #5 of Section 3.

##### G. FLUE LINING.

1. Hard burned fire clay products free from undue warpage, deep cracks, splits, blisters or other objectionable structural defects.
2. Size shall be as shown on drawings (modular).
3. Chimney flue lining shall be continuous of size shown on drawings.



## SECTION 6. WOOD

The work under this section shall include, but is not limited to the following items: Carpentry, Framing, Siding, Architectural Woodwork.

### A. GENERAL

#### 1. Grading Requirements.

a. Grade and Trade Mark: Use only lumber stamped with a recognized official mark of the association under whose rules it is graded.

b. Moisture Content: For framing lumber and millwork, not to exceed percentage established by Lumber Association under whose rules material used is graded; but in any case not more than 19% for framing lumber and 11% for millwork.

c. Lumber Quality: Sound thoroughly seasoned and free from warp that cannot be corrected in process of bridging or nailing.

#### 2. Workmanship.

a. Use hand tools on all exposed woodwork. On unexposed work: use hand tools where practical.

b. All boards, planks, sheathing, siding, interior millwork, furring strips, etc. to be band sawn. Do not use chain saw or circular saw on exposed woodwork.

c. All timber to be adzed and hewed to the Architect's approval.

#### 3. Preservative and Pressure Treatment:

a. All unexposed wood shall be pressure treated with a preservative in accordance with American Wood Preserver's Institute Standard LP-2. Surfaces cut after treatment shall be brush coated with preservative.

b. All wood which comes in contact with masonry and other cut surfaces, where applicable, a liberal amount of OSMO wood preserving compound should be applied. (OSMO Plastic Products, Ellicott Street, Buffalo, N. Y.).

#### 4. Storage and Protection:

a. Stack lumber and millwork to insure proper ventilation, drainage and protection from weather.

b. Protect kiln dried material from dampness during and after delivery.

c. Store under cover, not exposed to extreme temperature and humidity changes.

## SECTION 6. WOOD (CONT'D)

### B. GRADES AND SPECIES OF WOOD: (Note: DF means Douglas Fir)

<u>USE</u>	<u>GRADE</u>	<u>SPECIES</u>
1. Framing Lumber	Const. 1500 psi fs	DF
2. Subfloor	Plyscord, ext. glue, C-D, 5/8"	DF Plywood
3. Exterior wall sheathing	Ext. med. density overlaid, 5/8" or Plyscord, ext. glue, C-D, 1/2"	DF Plywood DF Plywood
4. Window and door frames and trim	C and better	Poplar
5. Exterior siding and adjoining trim.	1/2" clap board, band saw textured face random width, but not more than 7" exposed boards, certified kiln dried clear all heart, vert. gr.	Poplar
6. Other interior trim and frames	Clear	Native Oak
7. Interior stair		
a. Rail	Clear, (thickness shown)	Native Oak
b. Treads, risers, platforms & stringer	Clear, (thickness shown)	Native Oak
8. Exterior and interior doors	Clear (thickness shown)	Native Oak
9. Window Sash	Clear (thickness shown)	Hemlock or Poplar
10. Timber (floor beams, rafters, bunks)	Clear (thickness shown)	Native Oak
11. Floor boards	Clear, 6/4" random width band sawn,	Native Oak
12. Furring Strips	Constr. 1/4" random width	Hemlock or Poplar

## SECTION 6. WOOD (CONT'D)

### C. FRAMING:

1. Cut square on bearings, closely fitted, accurately true to lines and levels shown, rigidly secured in place.
2. Provide 2 x 6 blocking between joists at edges of all plywood sub-floor underlayment.
3. Completely enclose ends of joists and rafters framing into exterior walls with metal armored fabric to protect from moisture.
4. All unexposed wood shall receive, in the mill, treatment against decay and for water repellency in accordance with Commercial Standards CS 262-63 specifications (Three-minute Immersion Process). Manufacturer shall issue certificate of conformance with above commercial standard.
5. All joints nailed and glued with waterproof glue, corners mitred.
6. Puttying of poorly fitted joints not permitted.
7. Belt sanded all sides to smooth surface without knots, nicks or marks of any kind.
8. Protect frames with heavy building paper immediately after installation and until all work is completed.
9. Prime frames as directed by Architect before building in, setting sash and glazing.

### D. PLYWOOD SHEATHING AND SUBFLOOR:

1. Face grain perpendicular to supports.
2. Plywood continuous over two or more supports.
3. Joints only over bearing and staggered.
4. Secure subfloor with deformed shank nails, set 1/16", 6" o.c. panel edges, 10" o.c. intermediate.

### E. SIDING:

1. Lay tight, blind nailed with 8d box nails where lapped, face nailed with cut nails. Two nails per bearing.
2. Full lengths of material, edges plumb and butted closely and neatly against frames or trim; cut evenly at reveals.
3. Caulk continuously around openings before siding placed.



SECTION 6. WOOD (CONT'D)

F. ARCHITECTURAL WOODWORK:

1. Assembled and finished at mill or on site where practicable, to the Architect's approval.
2. All finish surfaces free of machine marks.
3. Cut nail heads and do not fill holes with putty, on finish surfaces.
4. Erect work plumb, level, straight, true and square. Joints tight and formed to conceal shrinkage.
5. Door and Window trim in single lengths without splicing, corners cut as shown on drawings.
6. Running finish in long lengths, scarf jointed only over solid supports.
7. Workmanship to meet highest standards of trade.

## SECTION 7. THERMAL & MOISTURE PROTECTION

The work under this section shall include, but is not limited to the following items: Building & Roof Insulation, Waterproofing, Vapor Barrier, Wood Shingles, Sheet Metal, Caulking & Sealants.

### A. BUILDING & ROOF INSULATION

1. In Stud Walls: 2" fiberglass blanket, foil enclosed.
2. Under Roof Sheathing, between rafters: 4" Batt type insulation. Batts shall be spun rock wool as manufactured by U. S. Gypsum or glass fiber insulation as manufactured by Zonolite.

### B. FOUNDATION WATERPROOFING

1. Waterproof foundation walls on the exterior face from the footing up to 3 inches below grade level with 3/4 inch of M or S mortar applied in two coats and cupped at the bottom over the footings to divert water from the wall.

2. Apply 1 coat of bituminous dampproofing material over parging. Dampproofing shall comply with ASTM D-449, Type A.

C. VAPOR BARRIER: Polyethelene Membrane, .006" thickness, rolls as wide as possible. Lap 2'-0" minimum. At exterior walls, bring above level of slab and cut only after pour.

### D. WOOD SHINGLES

1. Hand made oak shingles.
2. Two layers of sisilcraft paper or two layers of 30 lb. roofing felt, applied under shingles.
3. Shingles laid 10" maximum to the weather on longest roof slopes.
4. No roofing felt under starter at eave.
5. 18" wide 30 lb. felt over each course of shingle, lapping shingle 4".
6. Space shingles 1/4" apart, laying free end up.
7. At hips, lap shingles on adjacent roofs, lap direction to the prevailing wind and shave overlap smooth. Lay up sample for approval.
8. Hips shall not be capped with shingles, i.e., no "Boston hips.
9. Secure free edges of shingles with suitable tinted adhesive.
10. Laid by experienced roofer.
11. Use hot dipped zinc 6d box nails, heads not driven into shakes, two per shingle, 3/4" max. from sides.

## SECTION 7. THERMAL & MOISTURE PROTECTION (CONT'D)

### D. SHEET METAL

1. Door sill Flashing, flashings, counterflashings, curbs, etc.:  
20 oz. lead coated copper.

2. Accessories: Provide accessories or other items essential to the completeness of sheet-metal installation, though not specifically shown or specified. All such items, unless otherwise shown on the drawings or specified, of the same kind of material as the item to which applied. Nails, screws, and bolts shall be of the types best suited for the purpose intended; shall be of a composition that will not support galvanic action in the installation.

3. Brake flashings with clean, sharp, true bends, to profiles shown.

4. Installation made with full regard for expansion and contraction to avoid buckling and to maintain watertight conditions.

5. All corners and angles prefabricated so that no open gaps or seams occur.

6. Install flashing and counterflashing at all intersections of roof with vertical surfaces.

7. Head flashing brake formed in shop with crisp, straight and true angles to profiles shown.

8. Prime all sides of copperhead flashing with zinc chromate before installation.

9. Provide wire-screen vents, inside opening in stone foundation wall.

### E. CAULKING AND SEALANTS

1. Oil Base Caulking Compound equal to Pecora Architectural Caulking Compound.

2. Readily worked and unaffected by vibration or exposure to weather changes.

3. To form thin, tough, elastic film on surface, to remain permanently plastic underneath.

4. Non-staining, to match adjacent work or color.

5. Joints and spaces to be caulked must be clean, free from dust, and dry.

6. Caulk joints before final finish applied to adjacent work.

7. Apply compound with gun having proper size nozzle or with knife as required.



SECTION 7. THERMAL & MOISTURE PROTECTION (CON'T)

8. Use sufficient pressure to fill all voids and joints solid; superficial pointing of joints with a skin head will not be accepted.

9. Remove excess caulking and leave surfaces neat, smooth and clean.

10. Upon completion, caulking to have a smooth, even finish. All caulked joints to be watertight.

## SECTION 8. GLASS, GLAZING & HARDWARE

The work under this section shall include, but is not limited to the following items: Glass, Glazing, Hardware.

A. GENERAL: For wood doors and frames and wood windows and frames see Section 6. WOOD.

### B. GLASS & GLAZING

#### 1. Materials:

a. The glass may be salvaged defected glass and may be obtained from Westmoreland Supply Co. in Greensburg, Pa. or imported from W. Germany. (Address of importer will be supplied by Architect).

b. Glass sample is required and is subject to the Architect's approval.

c. Putty shall be mixed with oil to prevent its drying out. (Fed. Spec. TT-P-791A)

#### 2. Workmanship:

a. Do not set glass until rabbets have been primed and priming is dry.

b. Back putty sash, putty all edges of glass, clean off excess putty.

c. Putty to completely fill all apertures between glass and wood frame.

### C. HARDWARE

#### 1. General:

See drawings and details for items requiring hardware and installation details. Include all finish hardware and related items necessary to complete work shown and specified. Submit schedule of all finish hardware for approval.

#### 2. Schedule:

a. Metal: All hardware shall be handmade wrought iron or hot rolled steel coated with black wax. (The wax may be obtained from Mr. Carl E. Schultz, RFD #1, Mt. Pleasant, Pa.)

b. Submit samples of all hardware for the Architect's approval.

c. Exterior hinges: Strap hinges as shown on drawings.

SECTION 8. GLASS, GLAZING & HARDWARE (CONT'D)

d. Interior hinges: butterfly hinges, loose pin butts as shown on drawings.

e. Locks: rim locks.

f. Hooks: as shown on drawings. Location and quantity will be determined at the site.



## SECTION 9. FINISHES

The work under this Section shall include, but is not limited to the following items: Lath & Plaster, Wood Flooring, Painting.

### A. LATH & PLASTER

#### 1. General:

Section 4, A. (1) ASTM requirements, (2) ingredients, (4) mixing and (5) time limit are applicable for the plaster specified herein.

2. Wood Lath: 1/4" random width, white pine. The width of the lath may vary from 1 to 2 inches and is spaced not more than 1/2" apart.

#### 3. Application:

a. Base coat shall consist of 2 parts hydrated lime putty, 1 part portland cement, 9 parts aggregate by volume. To this shall be added 6 lbs. per cubic yard of hair or fiber. Surfaces of masonry walls shall be free from dirt, oil, or other foreign matter and be thoroughly and evenly dampened but not saturated. The stucco mortar shall be forced tightly against the surface and be a minimum of 1/4" thick. The entire surface shall be scratched to insure proper bond for the finish coat.

b. When the plaster is thoroughly set, apply the finish coat. The finish coat shall be applied within 48 hours of the base coat to insure proper bond.

c. Alternate base coat mix shall be (Dry Mix) 100 lbs. of finishing hydrated lime, 94 lbs. of portland cement, 750 lbs. of sand. To this mix, add 30 lbs. per cu. yd. of hair and straw.

#### 4. Workmanship:

a. Protect from freezing and too rapid drying.

b. Leave all finished surfaces in vicinity of plaster clean and free from plaster. Any material which is damaged by stucco or stucco application shall be replaced at the Contractor's expense.

c. Accentuate unevenness created by the wood lath.

### B. WOOD FLOORING

1. See Section 6, A and B for quality and grading requirements of wood floor boards.

2. Place felt between subfloor and finish first floor.

3. Starting of installation in a given area implies acceptance of the subfloor in that area.

4. Submit T&G strip flooring sample to Architect for approval.

## SECTION 9. FINISHES (CONT'D)

### C. PAINTING

#### 1. Materials:

##### a. Paint, Varnishes, Stains:

(1) Benjamin Moore, Samuel Cabot, National Gypsum, Marietta Paint and Varnish, and as noted herein.

(2) Highest grades, paints, sealers, stains, waxes, varnishes, pure shellac.

(3) Colors selected by Architect.

b. Putty: Pure linseed oil, white lead-whiting putty, colored to match finish coat.

##### c. Samples:

(1) Prepare on job to the satisfaction of the Architect.

(2) Wood finishes on samples of wood to be used in building.

(3) If required, small portion of wall surface, 4' x 6' painted as final sample.

#### 2. Workmanship:

##### a. General:

(1) Inspect all surfaces to be painted.

(2) Starting of work shall imply acceptance by this Contractor of surfaces to be painted or finished.

(3) All work done under favorable weather conditions and in a manner acceptable to the Architect. No painting when temperature is under 50 degrees.

(4) At least 24 hours should elapse between coats.

(5) Properly protect all floors and adjacent work, furniture, etc.

(6) Workmanship of the very best, all materials spread and smoothly flowed on without runs, sags, or brush marks. Employ only skilled mechanics.

(7) Finish hardware removed or protected before any painting.

(8) Wood surfaces cleaned. Natural wood nail holes puttied to match color of wood.

SECTION 9. FINISHES (CONT'D)

(9) All puttying after prime coat dry and tinted to match finished color.

(10) Prepare finished samples on specified wood for Architect's approval before beginning work.

b. Exterior Work:

(1) Wood Siding: First coat: Exterior primer. Second and third coat: White, Clark-Fontana 0400 white.

(2) Wood doors: First coat and second coat: Cabot's Clear or Pigmented Shingle Stain, or Moore's Bentwood Stain.

c. Interior Work:

(1) Apply Moore's Bentwood Stain or equal as directed by Architect and manufacturer's directions.

(2) Rub down lightly with "000" sandpaper.

(3) Two coats Marietta Color Developer. Buff with "0000" steel wool between coats.



## SECTION 10. SPECIALTIES

The work under this Section shall include, but not necessarily be limited to the following: Firefighting Devices, Identifying Devices.

### A. FIREFIGHTING DEVICES

1. Fire Extinguisher Cabinets may be made on site from wood and recessed in the building wall where it is least obtrusive, as approved by the Architect and the Fire Protection Engineer.

2. The quantity and quality of extinguishers will be determined by the Fire Protection Engineer.

## SECTION 16-ELECTRICAL

### A. SCOPE:

- a. The Contractor shall furnish all labor, materials, equipment and services necessary for the construction of the complete electrical systems.
- b. All labor and materials, although not specifically mentioned, but necessary for the completion of the work and the successful operation of the system, shall be provided as if it was specifically called for.
- c. The work under this section shall be subject to the requirements and conditions of other sections applicable to this work.
- d. The Contractor shall coordinate the installation of all electrical systems with other trades to insure proper fit and adequate clearances.

### B. EXAMINATION OF SITE:

- a. The Contractor shall examine the site and observe the conditions under which the work will be done or other circumstances which will affect the contemplated work. No allowance will be made subsequently in this connection for any error or negligence on the Contractor's part.

### C. REGULATIONS AND CODE REQUIREMENTS:

- a. All work shall conform to the requirements of the latest editions of the following codes, regulations and specifications:

- American Society for Testing and Materials
- National Electrical Code
- National Board of Fire Underwriters
- National Electrical Manufacturers Association
- Institute of Electrical and Electronics Engineers
- Underwriter Laboratories, Inc.
- Reflector and Lamp Manufacturers' Institute
- United States of American Standards Institute
- National Bureau of Standards
- The Potomac Edison Company

### D. INSPECTION AND CERTIFICATE:

- a. "An electrical certificate from an independent (non-governmental)

electrical inspection agency approved by the State of Maryland Fire Marshal must be submitted to the Department of General Services prior to or with the final payment invoice. The contractor must make application for the inspection, coordinate same, and pay the required inspection fees. The independent electrical inspection agencies are not considered local authorities as referred to in Article 7 (a) of the Department of General Services, General Conditions".

E. SHOP DRAWINGS:

- a. Detailed dimensioned shop drawings, together with descriptive specifications and engineering data sheet for all material and equipment shall be submitted for approval in accordance with the provisions of other sections of these specifications. In general, catalog cuts, illustrations, photographs, or samples of equipment specified by standard catalog numbers, will be sufficient for specific items of equipment, unless directed by the Architect. Should other drawings be required by the Architect, they shall be furnished as if specifically called herein.

F. GENERAL:

- a. The entire work shall be constructed and furnished in every part in a first class, substantial and workmanlike manner, according to the full intend and meaning of the drawings and specifications. Everything necessary for the completion of the work and successful operation thereof shall be furnished and installed.
- b. The general arrangement of conduit, wiring and equipment shall be as shown on the contract drawings. Detailed drawings of proposed departures due to actual field conditions or other causes shall be submitted to the Architect for approval, and any such changes shall be made without additional cost to the Owner. The Contractor shall carefully examine all contract drawings and shall be responsible for the proper fitting of materials and equipment in each location as indicated, without substantial alteration. Inasmuch as the drawings are generally diagrammatic and because of the small scale of the drawings, it is not possible to indicate all offsets, fittings and accessories which may be required. The Contractor shall carefully investigate the structural and finish conditions affecting his work and shall arrange such work accordingly, furnishing such fittings and accessories as may be required to meet such conditions. The right to make any reasonable change in location of apparatus, equipment, outlets or routing of conduit and wiring, up to the time of roughing-in is reserved by the Architect without involving any additional expense to the Owner.



- c. It shall be the responsibility of the Contractor to coordinate the work and equipment as specified herein with work to be performed and equipment to be furnished, as specified under other sections of the specifications in order to assure a complete and satisfactory installation, meeting the approval of the Architect.

G. SUPERVISION AND CONSTRUCTION PROCEDURES:

- a. It shall be the Contractor's responsibility to completely supervise and direct the work, using his best skill and attention. He shall be solely responsible for all construction means, techniques, sequence and procedures and for coordinating all portions of the work under the Contract.
- b. The Contractor shall completely familiarize himself with the entire project, including work of other trades, and shall also coordinate his work with the other trades. The Contractor shall also familiarize himself with and conduct his work in accordance with all other portions of the complete Contract Documents, including, but not limited to, the GENERAL AND SPECIAL CONDITIONS of the Contract.

H. EXCAVATION AND BACKFILLING:

- a. The Contractor shall do all excavating and backfilling necessary to install underground conduits included in this section of the work. He shall establish all lines and grades required for the proper location of the work and shall be responsible for the correctness thereof. He shall check elevation of all utilities before starting work. The Contractor shall do all excavation of every description and in whatever material encountered. Excavation may be accomplished by any customary method. Care shall be exercised that excavations are not carried below the required elevations. Should excavations be carried below the foundation lines or other required limits, such excess excavation shall be backfilled with concrete at the expense of the Contractor. Trenches shall be excavated for all conduit lines to the lines and grades established in the field. Banks of trenches shall be kept as nearly vertical as possible, and shoring shall be provided if required for protection of work and safety of personnel.
- b. Backfill shall consist of filling the excavated areas for conduit lines and other structures to the required elevation and repairing surfaces to their original condition. The Contractor shall use material obtained from the excavations,

unless otherwise directed. Backfill material shall be free from roots, stumps, brush, rubbish or other objectionable matter. No frozen material shall be placed in backfill nor shall backfill material be placed on frozen material. No rock shall be used for backfill within 12 inches of the top of conduit or cables. All backfilling shall be carefully tamped in 6 inch layers. All excavation required under this contract shall be unclassified; that is, the price bid shall be taken to include and cover all materials required to be excavated whether wet or dry and regardless of the character of the materials.

**I. TESTS:**

- a. The Contractor shall furnish all labor, material, instruments, fuel and power required to perform all necessary tests. All tests shall be to the complete satisfaction of the Architect. All defective material and/or workmanship discovered as a result of these tests shall be removed and replaced at the Contractor's expense and the test repeated.
- b. A thorough test shall be made in the presence of the Architect or his representative to demonstrate that the system is entirely free from ground faults, short circuits and open circuits; that the resistance to ground of all non-grounded circuits, before and after connection of fixtures and equipment meets the requirements of the National Electrical Code; and that all circuits are connected properly in accordance with the plans and the manufacturer's wiring diagrams.

**J. GUARANTEE:**

- a. In addition to the guarantee obligations hereinbefore specified in other sections of these specifications, the Contractor shall guarantee the complete electrical system installation free from all mechanical and electrical defects for the period of one (1) year beginning from the day of final acceptance of the work by the Architect or beneficial occupancy by the Owner, whichever occurs first.
- b. The Contractor shall also, during the one (1) year guarantee period, be responsible for the proper adjustments of all systems, equipment and apparatus installed by him and do all work necessary to insure efficient and proper functioning of the systems and equipment.

**K. TEMPORARY POWER:**

- a. The Contractor shall provide suitable temporary electrical service to the construction site for lighting and power for operating electric tools and equipment. The contractor shall pay all costs in connection with the temporary services and pay all charges for power used, up to the time of final acceptance of the entire project by the Owner.

L. GROUNDING:

- a. Grounding shall be in accordance with the requirements of the National Electrical Code and as hereinafter specified and/or indicated on the drawings. Perforated grounding straps will not be acceptable.
- b. Provide ground for secondary service neutral and all raceways, devices and utilization equipment permanently and effectively in accord with requirements of the National Electrical Code, and as hereinafter specified. Continuity of metal raceways shall be insured by double locknuts. All grounded neutral conductors shall be continuously identified. All grounding and bonding connections shall be solderless, except where indicated otherwise on the drawings. Ground fittings at water system connections shall have rigid clamp jaws and made of solid bronze.

M. RACEWAYS

- a. Conduit shall be zinc coated, hot-dip galvanized, rigid steel. Where the word "conduit" is used hereinafter, it shall mean rigid metal conduit or electrical metallic tubing. No conduit smaller than  $\frac{1}{2}$ -inch shall be used, unless otherwise indicated. Capped bushings shall be used, or necessary precautions taken to prevent foreign matter from entering the conduit system during construction. Conduit shall be joined by threaded couplings and fastened to outlet boxes with double locknuts and bushing in a manner assuring electrical ground continuity. For conduits passing from interior to exterior portions of the building or areas subjected to a different range of temperature gradient, compound bushings shall be used.
- b. All conduit shall be concealed in walls, unless otherwise directed or indicated. Conduit shall be run in as direct lines as possible, with bends made with long sweeps.
- c. Exposed conduits shall be installed with runs parallel or perpendicular to walls and ceilings with right angle turns consisting of symmetrical bends or cast metal fittings. Offsets shall be avoided where possible, but when required, an approved hickey or conduit bending machine shall be used. The use of a pipe tee or vice for bending purposes shall not be permitted.
- d. All conduit installed below grade shall be rigid metal. Conduit above grade shall be electrical metallic tubing except where indicated otherwise.

- e. Conduit buried directly in the earth shall be galvanized rigid steel with bonded PVC jacket, Pittsburgh Steel Co. "Plasti-bond" or approved equal.

N. OUTLET BOXES AND CONDUIT FITTINGS:

- a. Outlet boxes for concealed work shall be zinc-coated or cadmium plated sheet steel boxes not-less than 4 inches octagonal or square, and suitable for the service and type outlet. Extra large boxes shall be provided in accordance with the National Electrical Code where necessary to prevent crowding of wire in the box.
- b. All boxes, whether outlet, junction, pull or equipment, shall be furnished with appropriate covers.
- c. No sectionalized boxes shall be used.

O. JUNCTION AND PULL BOXES:

- a. Junction and pull boxes shall be furnished and installed as shown or where required to facilitate pulling of wires or cables. Such boxes shall be installed in accessible locations and shall be approved by the Architect.

P. WIRES AND CABLES:

- a. A complete system of conductors shall be provided in the raceway system as indicated on the drawings. No wires smaller than number twelve (12) AWG shall be used. Any circuit without further designation indicates a two-wire circuit. Conductors shall be continuous from outlet to outlet and from terminal board to point of final connection, and no splice shall be made except within outlet or junction boxes. All conductors shall be of the size and type as indicated on the drawings. All wires number eight (8) AWG and larger shall be stranded. The Contractor shall make wiring connections to all electrical equipment requiring electrical service. Wires and cables shall be as manufactured by Manhattan Cable Corporation, Hatfield Wire and Cable Corporation or General Cable Corporation.
- b. Building wire, unless otherwise indicated, shall have 600 volt, type **RHW** or **RHWN** insulation for interior use, and Type **USE**, style **RR** with **RHW** or **RHW** insulation for underground installation. Conductors shall be sized and run as indicated on the drawings. Conductors shall be soft drawn copper of not less than 98% conductivity.



- c. A color coding system, as listed below, shall be used throughout the building network of feeders and circuits and used as a basis of balancing the load.

120/240 Volt System

<u>Phase</u>	<u>Color</u>
A	Black
B	Red
Neutral	White

All wires used solely for grounding purposes shall have green color if insulated. All control wiring shall be color coded with wires of colors different from those used to designate phase wires.

Q. SPLICES:

- a. The joints of 10 AWG and smaller shall be made with properly insulated solderless type pressure connectors. Where stranded conductors or multiple solid conductors are connected to terminals, solderless lugs manufactured by Thomas and Betts Company shall be used. "Scotchlock" electrical spring connections, except that on joints and splices of lighting fixtures Ideal "Wirenuts" with threaded metal inserts may be used.
- b. The joints of No. 8 AWG and larger in power and lighting circuits shall be of the type indented into the conductor by means of a hand or hydraulic pressure tool. Connectors shall be Burndy "Hy-lug", T & B "Sta-Kon", or approved equal. For small wiring, such as control wiring, small connections, Burndy "Hy-lug", or approved equal, shall be used.

R. WIRING DEVICES:

- a. All wall switches shall be rated a minimum of 20 amperes at 125 volts. Receptacles shall be 20 ampere, 125 volts, single or duplex grounding type as indicated. The following catalog numbers for wiring devices are Bryant. Similar equipment of Circle-F, or Pass and Seymour, Inc., will be acceptable.

<u>Device</u>	<u>Catalog No.</u>
Single Pole Switch	5861
Duplex Receptacles	5352

- b. Device plates for the above shall be .040 inch metal with brushed finish.
- c. Submit one sample of each type device and one sample of device plate for approval by the Architect.

S. SAFETY DISCONNECT SWITCHES:

- a. The Contractor shall furnish and install safety disconnect switches as shown on the drawings and where required by the National Electrical Code. Switches shall be horsepower rated where applicable, and shall be of the sizes required.
- b. Safety switches shall be heavy duty type as manufactured by Square-D Company. Switches shall be unfused, unless otherwise indicated, side handle operated, and shall be NEMA 1 for general interior work and NEMA 4 for exterior work and damp locations. Switches shall be equipped with a cover interlock to prevent operation with cover open.
- c. All switches shall be visible blade, externally operated, with all current carrying parts a silver or tin plated. All switches shall have provisions for not less than two external padlocks.

T. THERMAL MANUAL MOTOR STARTING SWITCHES:

- a. Manual motor starters of the snap-switch type, containing thermal over-load protection and a self-indicating trip-free handle shall be furnished and installed adjacent to each exhaust fan where shown on the drawing. The starters shall be Square 'D' Company, class 2510 or approved equal.

U. EQUIPMENT CONNECTIONS:

- a. All conduit, outlets, wiring and any other necessary fittings or accessories for power connections for heating, cooling and ventilating equipment, pumps, fans, etc., shall be installed under this section. All motor and equipment ratings shown on the drawings are approximate. Should equipment of different ratings be furnished, all circuit components shall be adjusted accordingly.

V. LIGHTING FIXTURES:

- a. A lighting fixture shall be provided for each outlet shown on the drawings, of the design and quality described herein.
- b. Fixtures indicated in the Attic space shall be porcelain keyless type lamp holders with one, one-hundred watt A-21 inside frosted lamp. Circle 'f' catalog no. 212-0 or equal.
- c. Fixtures indicated on the first and second floors shall be a hexagonal sided lantern with double thick glass and door on hinges having a wire closure lock. The fixture shall be constructed of tin and completely hand-made. Manufactured by G. Gedney Godwin, Box 100, Valley Forge, Penna. 19481, Catalog No. 3125. Lamps shall be as recommended by the manufacturer. The fixture shall be supported from the beam as indicated on the drawings using an iron hook and spike. The design of the hanging device shall be approved by the Architect.

W. PANELBOARDS:

- a. Furnish and install, where indicated on the drawings, automatic circuit breaker panelboards complete with enclosing cabinets. Enclosures shall conform to standards established by Underwriters' Laboratories, Inc. and requirements of the National Electrical Code. Circuit breakers shall have 10,000 ampere minimum interrupting current rating.
- b. Panelboard shall be 120/240 volts, single phase, three wire with main circuit breaker as indicated on the drawing. Branch breakers shall be as indicated on the drawings.
- c. Each panel shall be equipped with a type written directory, indicating plainly what each branch circuit of the panel controls.
- d. Panelboards shall be as manufactured by Square-D Company, Westinghouse or I.T.E.

X. ELECTRIC SERVICE:

- a. Primary electric service will be run underground by the Potomac Edison Company to utility owned pad-mounted transformer.
- b. Secondary electric service will be run underground at 120/240 volts, single phase, three wire from the power company meter

to the service entrance installation as indicated on the drawings.

- c. All conduits, cable, fittings, etc., shall be furnished and installed as required for the complete installation. The complete service installation shall be furnished and installed to conform to the requirements of the utility company.